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ORIGINAL ARTICLE

Migraine attack related to shift work in emergency residents at Riyadh, Saudi Arabia hospitals; a cross-sectional study

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ABSTRACT

Objective: This study aimed to assess migraine prevalence and shift work-related factors among emergency residents in Riyadh, Saudi Arabia.

Methods: A cross-sectional study enrolled 376 emergency residents. A validated questionnaire and Migraine Disability Assessment Test (MIDAS) were used to collect the data from the emergency residents.

Results: Out of 376 emergency medicine residents surveyed across Riyadh hospitals, 34.3% were diagnosed with migraines, and 44.1% reported a family history. Frequent headache episodes (3-6/month) were experienced by 43.4% of participants, with 34.0% reporting headaches lasting from 5 to 10 minutes. Throbbing or pulsating headaches (56.4%) and one-sided headache locations (50.5%) were the predominant clinical features. Photophobia, phonophobia, nausea, and vomiting were reported by 43.4%, 47.3%, 46.0%, and 38.0%, respectively. Common triggers included sleep disturbances (53.5%), strong smells (33.8%), and lights (33.8%). The median MIDAS score was 7 (IQR: 8), with only 17.3% experiencing severe migraine-related disability. Disability was significantly higher among females, those ≥35 years old, non-Saudi residents, those divorced/widowed, and residents with ≥3 years of experience.

Conclusion: Over one-third of emergency medicine residents suffered from migraines, with a considerable proportion experiencing moderate to severe disability. Headache frequency, associated symptoms, and insufficient medical evaluation highlighted the need for targeted awareness, early diagnosis, and intervention strategies to reduce disability and improve residents' well-being and productivity.

Keywords: Migraine, shift work, MIDAS, migraine disability, residents, Saudi Arabia.

Introduction

Migraine is a neurological condition that affects a significant number of individuals around the world [1]. Presently, it is estimated that around 14%-15% of the global population suffers from migraines, which accounts for approximately 4.9% of those who report being ill [2]. A hallmark of migraines is recurrent headaches that can lead to intense, throbbing pain or a pulsating feeling, typically on one side of the head. The Global Burden of Disease study indicates that from the year 1990 to 2019, the worldwide prevalence of migraines rose from 721.9 million to 1.1 billion cases [3].

Various elements can trigger chronic migraine episodes. Conditions such as obesity, depression, frequent use of medication, certain anti-infective drugs, and stress can all contribute to the onset of migraines. Additionally, sleep disorders might interfere with sleep patterns, turning episodic migraines into chronic ones [4].

Sudden migraines can often strike individuals without any identifiable external causes. To help reduce the frequency, severity, and length of these episodes, various preventive measures can be recommended. These might include medical interventions, such as medications or procedures, as well as non-medical approaches, like the use of devices [5]. Migraines can be initiated by several factors, including extended periods of fasting,

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low blood sugar levels, disruptions in sleep, emotional stress, hormonal fluctuations linked to contraceptive use, menstruation, and ovulation. Certain medications, like nitroglycerin, reserpine, and estrogen, can also act as triggers [6].

A systematic review and meta-analysis conducted in Saudi Arabia indicated that migraine accounted for 25% of all headache types [7]. Additionally, research conducted in Jeddah revealed that the occurrence of migraines within the general population reached 37.2% [8]. Various research findings indicated a connection between shift work and migraines, particularly in relation to headaches that result in disability. A combination of case studies and narrative reviews revealed that individuals working shifts tend to experience chronic migraine episodes and a greater occurrence of disability related to headaches. Furthermore, research consistently showed that shift workers face a higher risk of undiagnosed headaches and migraines compared to those with regular daytime schedules. The stress and irregular hours inherent in shift work appear to be a major trigger for these episodes [9].

Previous studies have also explored how workplace demands, such as high-pressure environments, long hours, and disrupted sleep, contribute to migraine frequency and severity. Nonetheless, there is a lack of current data regarding the link between headache occurrences and shift work among emergency residents in Saudi Arabian hospitals. Consequently, the findings from this study would aid in identifying migraine incidents among emergency residents and contribute to the formulation of national strategies aimed at alleviating migraine symptoms among workers in Saudi Arabia. Hence, this study aimed to evaluate the relationship between shift work and migraine attacks among emergency residents at hospitals in Riyadh, Saudi Arabia.

Subjects and Methods

The cross-sectional, observational, survey-based study was conducted at the primary health care centers (PHCCs) of the Ministry of Health, Saudi Arabia from June 2024 to March 2025. Data were collected from emergency residents at a selected hospital in Saudi Arabia.

The sample size was determined using the Raosoft statistical program, which established a 95% confidence level, a 5% margin of error, and a 50% response distribution. As a result, approximately 377 participants were identified as necessary for the study, with a target of 400 participants to consider potential dropouts. A simple random sampling technique was used.

A self-administered, previously validated questionnaire adopted from a prior study was distributed to participants [10]. To gather data, a list of emergency residents' names and contact numbers was obtained from each sector, and a random sampling technique was applied until all questionnaires were retrieved. The study included emergency residents working in Primary Health Care Centers (PHCs) under the Ministry of Health in Saudi Arabia who were present at the time of data collection and agreed to participate by completing the full questionnaire. Physicians were excluded if they were not affiliated with MOH PHCs, were on leave or unavailable during data collection, or belonged to other professional categories such as interns, nurses, or administrative staff. Questionnaires that were incomplete or blank were also excluded from the analysis.

The questionnaire consisted of three main parts. The first part included socio-demographic and personal characteristics, including age, gender, nationality, marital status, and years of experience. The second part consisted of questions about the diagnostic criteria of episodic migraine headache and the associated factors. The third part was the Migraine Disability Assessment Test (MIDAS) [10].

The MIDAS questionnaire was composed of five scored questions and two additional questions. Questions should be answered over the last three months to measure the impact of migraine headaches on participants' lives. The participant's performance was evaluated on working days, household days, and social activities. The total score was divided into four grades to suggest treatments for the participant according to the participants' grade level. The grades had been categorized as follows: Grade I indicated little or no disability, with scores ranging from 0 to 5, suggesting a low medical need. Grade II reflected a mild disability, with scores between 6 and 10. Grade III represented a moderate disability, with scores from 11 to 20. Lastly, Grade IV signified a severe disability, with scores of 21 or higher, which required a high level of medical attention, particularly in the cases of Grades III and IV [11].

Dependent variables for this study were the prevalence of migraine headache and its degree, while the independent variables were demographic characteristics of the participants and the questions assessing the diagnostic criteria of episodic migraine headache and the associated factors.

Statistical analysis was conducted using the IBM Statistical Package for Social Sciences (SPSS) software (version 26.0, Armonk, NY, USA). Categorical variables were expressed in percentages and numbers, while numerical data were expressed as mean and standard deviation (SD) for normally distributed data and as a median and interquartile range (IQR) for non-normally distributed data. Group comparisons between categorical and continuous variables were conducted using the Mann-Whitney U test for two groups and the Kruskal-Wallis H test for more than two groups. The statistical significance was considered when *p*-values were below 0.05. A valid percentage was calculated for missing data.

Results

A total of 376 emergency residents completed the questionnaire. The majority of residents were males (62.0%) and aged 25–34 years (74.97%). Most, 60.6%, were single, and 89.6% were Saudi nationals. Regarding residency year, second-year residents were the majority group (37.2%). The majority had 1–2 years of experience (37.2%) (Table 1).

Only 38.6% of participants had been evaluated by a neurologist, and 34.3% had been diagnosed with

***Table 1**. Socio-demographic characteristics among emergency residents at Riyadh, Saudi Arabia hospitals (n = 376).*

Factor	Category	Number (n)	Percentage (%)
Gender	Male	233	62.0
	Female	143	38.0
Age (years) (n = 560)	18-24	55	14.6
	25-34	281	74.7
	35-44	38	10.1
	>44	2	0.5
Years of experience (years)	<1	106	28.2
	1-2	140	37.2
	3-5	116	30.9
	>6	14	3.7
Marital status	Single	228	60.6
	Married	112	29.8
	Divorced	32	8.5
	Widowed	4	1.1
Nationality	Saudi	337	89.6
	Non-Saudi	39	10.4
Year of residency	1st year	113	30.1
	2nd year	140	37.2
	3rd year	70	18.6
	4th year	53	14.1

migraines. Only 33.2% experienced a head or neck injury requiring medical attention, and 26.9% had a chronic health disorder. About half of the participants (44.1%) had a family history of migraines. The frequency of headaches varied, with 33.5% experiencing 1 to 3 episodes per month. Headache duration was mostly between 5 and 10 minutes (34.0%). The most reported first onset of headaches was before age 15 years (44.1%). In the past year, 65.2% of residents reported experiencing headaches. Regarding headache clinical characteristics, throbbing or pulsating was the most reported (56.4%). Headaches were exacerbated in 53.7% of participants by physical activity. In 46.0% and 38.0% of participants, headaches were associated with nausea and vomiting, respectively. Sensitivity to light and noise was observed in less than half of the cases (43.4% and 47.3%, respectively) (Table 2).

The median (IQR) total MIDAS score was 7 (8), with most individuals having little to no disability (Grade I) (38.8%), followed by those with mild disability (Grade II) (32.7%) (Table 3).

The highest impact on headaches was missed household work, followed by missing social or leisure activities, with a median (IQR) of 1 (3) and 1 (2) days, respectively. Participants reported a median (IQR) of 1 (3) day of having headaches in the last 3 months, with a median (IQR) headache pain score of 6 (3) out of 10 (Table 4).

Female residents had significantly higher disability scores compared to males (median (IQR) 8 (29) vs. 6 (8), $p < 0.001$). Participants aged 35 years or older had significantly higher MIDAS scores compared to younger individuals (39.5 (67), $p < 0.001$). Additionally, the experience level also impacted disability score. Those having three or more years of experience reported higher scores than those with two or fewer years (9 (14), p-value = 0.009). Those who were divorced or widowed had higher disability than married and single participants (60.5 (47), $p < 0.001$). Non-Saudi residents showed a greater disability score than Saudi residents (8 (16), p-value = 0.001). Finally, third to fourth-year residents reported higher disability scores compared to earlier-year residents (15 (21) vs. 7 (8), $p < 0.001$) (Table 5).

A significant association was found between the MIDAS score and being evaluated by a neurologist, type of headache diagnosis, history of head or neck injury, number of headache episodes per month, duration of headache, and age at first onset ($p < 0.05$). Participants evaluated by a neurologist had higher disability scores than those who were not (8 (8) vs. 6 (9), p-value = 0.004). Those diagnosed with migraine had higher scores compared to those diagnosed with other headache types (8 (6) vs. 7.5 (32) vs. 5 (9), p-value = 0.001). Similarly, individuals with a history of head or neck injury reported greater disability (8 (7) vs. 6 (9), p-value = 0.023). Participants experiencing more than six headache episodes per month had significantly higher disability scores compared to those with fewer episodes (15 (56) vs. 7 (6) vs. 4 (8), $p < 0.001$). In terms of duration, residents whose headaches lasted between 5–10 minutes had higher MIDAS scores than those with episodes lasting more than 10 minutes than shorter episodes (8 (12) vs. 8 (12) vs. 6 (6), $p < 0.001$). Furthermore, the age of first headache significantly impacted disability levels, with higher scores among those with onset after age 20 years compared to earlier onset at 15–20 years or < 15 years (25 (64) vs. 7 (8) vs. 6 (6), $p < 0.001$). Associated symptoms before or during headache such as vision loss (8.6 (6)

***Table 2**. Migraine and headache characteristics and the associated factors among emergency residents (n = 376).*

Factor	Category	Number (n)	Percentage (%)
Evaluated by a neurologist	Yes	145	38.6
	No	231	61.4
Diagnosis	Migraine	129	34.3
	Tension-type	128	34.0
	Clusters	26	6.9
	None of the above	93	24.7
Have a head or neck injury requiring medical treatment	Yes	125	33.2
	No	251	66.8
Family history of migraine headaches	Yes	166	44.1
	No	210	55.9
Diagnosed with any chronic health disorder	Yes	144	38.3
	No	232	61.7
Clinical characteristics of headache			
Headache episode per month (episode)	1-3	126	33.5
	3-6	163	43.4
	6-9	67	17.8
	≥10	20	5.3
Duration of the headache (minutes)	<5	114	30.3
	5-10	128	34.0
	10-15	60	16.0
	>15	74	19.7
Age of the first headache (year)	<15	166	44.1
	15-20	133	35.4
	20-25	57	15.2
	25-30	15	4.0
	>30	5	1.3
Having a headache over the last year	Yes	245	65.2
	No	131	34.8
Having a headache not related to any other illness	Yes	245	65.2
	No	131	34.8
Headache description	Throbbing or pulsating	212	56.4
	Pressing, squeezing, or tightening	164	43.6
Type of headache pain	One side of the head	190	50.5
	Both sides	186	49.5
Physical activity worsens the headache	Yes	202	53.7
	No	174	46.3
Feeling nauseous with this headache	Yes	173	46.0
	No	203	54.0
Vomiting with this headache	Yes	143	38.0
	No	233	62.0
Bothered by daylight or other lighting	Yes	163	43.4
	No	213	56.6
Bothered by noise	Yes	178	47.3
	No	198	52.7
Before or during your headache symptoms	Zigzag lines appear	161	42.8
	Loss of vision	94	25.0
	Blurred/double vision	92	24.5
	Numbness or tingling	50	13.3
	One-sided body weakness and speech	24	6.4
	None	122	32.4

Continued

Factor	Category	Number (n)	Percentage (%)
Having headaches or worsening by	Sleep disturbance	201	53.5
	Certain smells or perfumes	127	33.8
	Lights	127	33.8
	Weather change	126	33.5
	Missed meals	115	30.6
	Smoking	113	30.1
	Certain foods	73	19.4
	Stress	76	20.2
	Exercises	62	16.5
	Hormones in women	54	14.4
	Sexual activity	20	5.3
	Rest	15	4.0
	Quiet and darkness	10	2.7
	None	27	7.2

Table 3. *MIDAS severity Grades among emergency residents (n = 376).*

Factor	Category	Number (n)	Percentage (%)
Total MIDAS Score	Grade I (0-5)	146	38.8
	Grade II (6-10)	123	32.7
	Grade III (11-20)	42	11.2
	Grade IV (>21)	65	17.3

Table 4. *MIDAS among emergency residents (n = 374).*

Factor		Mean ± SD	Median (IQR)	Min-Max
How many days in the last 3 months, because of your headaches, have you				
1.	Missed work or school	2.73 ± 5.702	1 (2)	0-59
2.	Reduced productivity at work or school by half or more	3.10 ± 5.430	1 (3)	0-50
3.	Missed household work	3.56 ± 6.394	1 (3)	0-52
4.	Reduced household work productivity by half or more	3.20 ± 5.987	1 (2)	0-53
5.	Missed family, social, or leisure activities	3.29 ± 7.071	1 (2)	0-72
Total Score		15.88 ± 25.240	7 (8)	0-138
6.	Having a headache	4.24 ± 9.720	1 (3)	0-90
7.	Headache pain scale of 0-10	5.56 ± 1.826	6 (3)	0-10

Table 5. *Demographics impact on Disability Assessment Test (MIDAS) total score.*

Factor	Category	Total MIDAS Score Median (IQR)	*p*-value
Gender	Male	6 (8)	**<0.001**
	Female	8 (29)	
Age (years) (n = 560)	18-24	7 (7)	**<0.001**
	25-34	6 (8)	
	≥35	39.5 (67)	
Years of experience (years)	<1	7 (6)	**0.009**
	1-2	7 (9)	
	≥3	9 (14)	
Marital status	Single	6 (7)	**<0.001**
	Married	8 (14)	
	Divorced/Widowed	60.5 (47)	
Nationality	Saudi	7 (8)	**<0.001**
	Non-Saudi	25 (55)	
Year of residency	1st	6 (6)	**0.001**
	2nd	8 (12)	
	3rd - 4th	8 (16)	

Table 6. *Headache diagnosis, frequency, and features impact on disability assessment test (MIDA) total score.*

Factor	Category	Total MIDAS Score Median (IQR)	*p*-value
Evaluated by a neurologist	Yes	8 (8)	**0.004**
	No	6 (9)	
Diagnosis	Migraine	8 (6)	**0.001**
	Tension-type/Cluster	7.5 (32)	
	None of the above	5 (9)	
Have a head or neck injury requiring medical treatment	Yes	8 (7)	**0.023**
	No	6 (9)	
Family history of migraine headaches	Yes	8 (6)	0.051
	No	6 (9)	
Diagnosed with any chronic health disorder	Yes	8 (7)	0.121
	No	6.5 (9)	
Headache episode per month (episode)	1-3	4 (8)	**<0.001**
	3-6	7 (6)	
	>6	15 (56)	
Duration of the headache (minutes)	<5	6 (6)	**<0.001**
	5-10	8 (12)	
	>10	8 (12)	
Age of the first headache (year)	<15	6 (6)	**<0.001**
	15-20	7 (8)	
	>20	25 (64)	
Having a headache over the last year	Yes	6 (7)	**<0.001**
	No	9 (43)	
Having a headache not related to any other illness	Yes	7 (8)	0.142
	No	8 (16)	
Headache description	Throbbing or pulsating	7 (7)	0.547
	Pressing, squeezing, or tightening	7 (16)	
Type of headache pain	Both sides	7 (6)	0.544
	One side of the head	8 (16)	
Physical activity worsens the headache	Yes	7 (7)	0.418
	No	7.5 (16)	
Feeling nauseous with this headache	Yes	8 (6)	0.204
	No	6 (9)	
Vomiting with this headache	Yes	7 (7)	0.055
	No	7 (10)	
Bothered by daylight or other lighting	Yes	7 (7)	0.294
	No	7 (10)	
Bothered by noise	Yes	8 (7)	0.063
	No	6 (9)	
Before or during your headache symptoms			
Loss of vision	Yes	8.6 (6)	**0.004**
	No	6.5 (9)	
Numbness or tingling	Yes	11 (54)	**<0.001**
	No	7 (7)	
One-sided body weakness and speech	Yes	57 (78)	**<0.001**
	No	7 (8)	
None	Yes	4.5 (9)	**<0.001**
	No	8 (10)	
Having headaches or worsening by			
Sleep disturbance	Yes	6 (7)	**0.023**
	No	8 (22)	
Weather changes	Yes	8 (6)	0.056
	No	7 (10)	
Hormones (women)	Yes	8 (15)	**0.010**
	No	7 (9)	
None	Yes	3 (8)	**0.001**
	No	7 (9)	

vs. 6.5 (9), p-value = 0.004), numbness/tingling (11 (54) vs. 7 (7), $p < 0.001$), and one-sided weakness or speech difficulty (57 (78) vs. 7 (8), $p < 0.001$) were significantly associated with increased MIDAS scores. Among headache triggers, sleep disturbance was significantly associated with lower disability (6 (7) vs. 8 (22), p-value = 0.023). Hormonal changes in women were also linked with higher scores (8 (15), p-value = 0.010), while those who reported no known triggers had the lowest disability levels (3 (8), p-value = 0.001) (Table 6).

Discussion

Migraine prevalence is rising globally, with shift work identified as a significant contributing factor. Emergency medicine residents, who often have demanding schedules, experience a substantial burden of migraine headaches. This cross-sectional study conducted among emergency medicine residents in Saudi hospitals found that 34.3% reported having a formal diagnosis of migraines, 34.0% reported tension-type headaches, and 33.3% reported experiencing 10 or more headache episodes per month. This result aligns with similar studies among healthcare workers in South China (25.9%) (12) and Brazil (28.2%) (13). Similarly, Kuo et al. [14] reported an increased migraine risk among physicians (adjusted odds ratio [AOR]: 1.67) and nurses (AOR: 1.62) compared to the general population, while Choudry et al. observed a 24.4% migraine prevalence among physicians and medical students in Pakistan [15]. In contrast, Bulman et al. reported a higher prevalence of 37.2% in the general population of Jeddah [8].

The burden of migraine on daily functioning was evident in the disability scores. The median (IQR) MIDAS total score was 7 [8]. Although most participants experienced mild to no disability (Grade I: 38.8%, Grade II: 32.7%), 17.3% experienced severe disability (Grade IV), and 11.2% had moderate disability (Grade III). These figures reflected a moderate impact on daily functioning among residents. Residents aged ≥35 and those with ≥3 years of experience reported significantly higher disability scores (median MIDAS 39.5 ($p < 0.001$) and 9 (p-value = 0.009), respectively), suggesting cumulative effects of prolonged shift work and occupational stress. This aligns with Xie et al., who observed that more than 6-night shifts/month increased migraine risk (OR 2.72), whereas doctors showed a non-significant trend (OR 1.80). Notably, doctors had an increased tension-type headache risk (OR 2.31), possibly related to prolonged sitting postures [12].

Likewise, Navarro-Pérez et al. found that 24-hour on-call shifts significantly increased migraine disability, with MIDAS scores doubling from 4.0 to 8.0 (p-value = 0.001) [16]. Silva Júnior et al. also found that working more than 60 hours per week was associated with increased migraine risk (OR 1.66) [13]. Another study by Magnavita reported that 48.8% of workers experienced headaches, with 38.7% suffering severe impact on productivity, using the Headache Impact Test-6 with a result of > 55 (9).

The current study data further showed that missed household work and social/leisure activities, with median (IQR) of 1 (3) and 1 (2) days, respectively, were the most affected domains, underscoring migraine's occupational burden.

Shift work was identified as a critical exacerbating factor, with 46.3% of current participants reporting worsened headaches, consistent with evidence from Taiwan showing increased migraine risk with long-term shift work among healthcare professionals. These findings align with Riccò et al.'s report that 61.2% of Italian occupational physicians perceived migraine as challenging to manage in workplace settings, and prolonged exposure to shift work exacerbated migraine severity [17]. Sandoe et al. similarly found that shift work contributes to migraine chronification, with patients reverting to episodic migraine only after discontinuing night shifts [4].

Night shifts are likely to disrupt circadian rhythms, leading to reduced sleep quality, a significant migraine trigger reported by 53.5% of participants. Stress, reported by 20.2% of participants, was also a common trigger. This finding aligns with the research by Navarro-Pérez et al., which showed that poor sleep quality, as measured by the Pittsburgh Sleep Quality Index (PSQI), worsened after night shifts, with scores increasing from 7.0 to 8.0 (p-value = 0.003). Additionally, anxiety levels, assessed using the Hospital Anxiety and Depression Scale (HADS), rose from 5.0 to 8.0 ($p < 0.001$) after night shifts [16]. These findings support previous conclusions that work-related stress and disrupted sleep, both frequent in shift work, are major migraine triggers linked with anxiety and sleep disorders [18].

Female residents in the current study reported significantly higher disability scores than males (median MIDAS 8 vs. 6; $p < 0.001$). This finding aligns with Choudry et al, where female physicians had a higher migraine prevalence (32.2%) than males (22.7%) [15]. Silva Júnior et al. also identified female gender as a strong predictor of both migraine (OR 3.10) and headache-related functional impairment (OR 1.39) [13]. Similarly, Xie et al. noted that women were more than twice as likely to experience migraine compared to men among Chinese doctors [12].

Interestingly, residents with a family history of migraines reported lower disability scores, although this did not reach statistical significance. The current study findings suggested that residents with prior migraine experience might recognize symptoms earlier and take proactive steps to manage them. This aligns with Choudry et al., who suggest that greater awareness can help reduce migraine-related disability [15].

The current study highlighted a high prevalence of migraines among emergency medicine residents in Riyadh, significantly impacting their work performance, well-being, and overall quality of life. Key contributors include erratic shift schedules, poor sleep, and high stress levels, with notable differences based on gender and years of experience. These results call for institutional changes, such as better shift scheduling, mental health support, and educational programs on migraines. Addressing these modifiable risk factors could improve resident health, enhance patient care, and promote long-term workforce sustainability.

While this study offers important insights into migraine prevalence among emergency residents, several limitations should be considered. First, relying on self-reported data introduced the possibility of recall bias or inaccurate reporting of symptoms. Second, this cross-sectional design means did not determine whether shift work directly causes migraines; this would require longer-term tracking of residents. Additionally, since the collected data were from a single urban center, the current study findings might not reflect the experiences of residents working in rural areas or private hospitals. Moving forward, research should follow residents over time to better understand how shift patterns affect migraine development, investigate how cultural factors influence migraine experiences through in-depth interviews, and evaluate practical solutions like adjusted work schedules in actual hospital settings.

Conclusion

More than one-third of emergency department residents in this study had a diagnosed migraine, with many reporting frequent headache episodes, and 28.5% experiencing moderate to severe disability from their symptoms. Common migraine features, such as throbbing pain, nausea, light sensitivity, and work impairment, were widespread. However, only 38.6% of residents had seen a neurologist, and many struggled with frequent, debilitating headaches without a formal diagnosis. Female residents were disproportionately affected, with significantly higher disability scores. Given the intense demands of emergency medicine training, these findings highlighted an urgent need for routine migraine screening, easier access to neurology referrals, and targeted support programs. Moving forward, interventions should focus on education, stress reduction, and workplace adjustments to safeguard residents' health and optimize their clinical performance.

List of Abbreviations

HADS	Hospital Anxiety and Depression Scale
IQR	Interquartile Range
MIDAS	Migraine Disability Assessment Test
PHCCs	Primary Health Care Centers
PSQI	Pittsburgh Sleep Quality Index
SD	Standard Deviation
SPSS	Statistical Package for Social Sciences

Consent for Participation

Informed consent was obtained from the participants.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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Ethical Approval

Ethical approval was granted by the Institutional Review Board (IRB) at King Faisal Specialist Hospital & Research Center, Riyadh, Saudi Arabia, via reference number 2241053, dated 26 February 2024.

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