

Migraine among Medical and Non-Medical Students of Hail University

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ABSTRACT

Background: Migraine is a common neurological disorder with significant impact on quality of life. The unpredictable nature of the disease leads to frequent absenteeism or decreased productivity at work. The aim of this study was to investigate the prevalence and characteristics of migraine in medical and non medical students of Hail University, KSA and to assess their knowledge about the disease. **Methods:** The present cross sectional community based study was conducted in Hail University. **Materials and Methods:** The study included 800 students; 332 medical and 468 non medical students formed the study group. Students filled a detailed questionnaire focusing on demographics, pain characteristics, accompanying factors, triggers, and knowledge about migraine. Lifestyle variables were enquired and migraine associated absenteeism. The diagnosis of migraine was made according to the International Headache Society criteria. **Results:** The students' awareness of migraine was good, as 48.9% of non medical and 84.6% of medical students had a good background. Twelve point seven percent of medical and 51.5% of non medical students had headache. The prevalence of migraine in all students was 35.4%; however the prevalence was 80.1% of males and 61.9% in females. About half (44.4%) of medical and 45.2% of non medical had the first attack at 18-22 years. In 20.7% of non medical and 31.0% of medical had migraine attack lasting 5-12 hours. Forty one point five percent of non medical and 38.1% of medical students had neck stiffness as accompanying symptoms. Trigger factors were prolonged sleeping and irregular exercises in 29.5% of non medical and 16.6% of medical students. Pain of migraine radiated to the back of the head in 26.1% of non medical and 14.3% of medical students. Acetaminophen, NSAIDs, Ergotamine, Opioids, non pharmaceutical was used in 19.9% of non medical and 42.9% of medical students. **Conclusion:** Our study found a high prevalence of migraine in non medical and medical students. The students' awareness of the disease was good and most of the students resorted self-medication. Our study identified previously less-recognized triggers like prolonged sleeping hours and accompanying symptoms like neck stiffness.

Keywords: Medical and non medical students, migraine, Hail university.

INTRODUCTION

Migraine is known to be one of the most common primary headache disorders. It is prevalent among about 11% in the general population, being prevalent in females twice or thrice higher than in males, and it is also ranked as the seventh most disabling disease worldwide [1].

Migraine is generally characterized by debilitating head pain, nausea, vomiting, photophobia, phonophobia and in some cases, visual or sensory disturbances. Migraine is associated with high costs, mostly indirectly including unproductivity and wastage of work time [2].

It has been estimated that headaches, especially migraine, have caused the loss of 112 million days of work or school every year for the US population and 25 million days for the UK population [3].

Despite its high prevalence and disabling nature, migraine has continued to be under-

recognized and under-treated, even in developed countries [4].

University students represent an important focus for the study of migraine prevalence. Since university students are subjected to psychological and physical stress, migraines are more common among them, especially medical students [5].

The prevalence of migraine among medical students ranges from 11 to 40% worldwide [6].

Migraineurs may suffer from functional comorbid conditions such as depression, anxiety and post-traumatic stress disorders [7] which if untreated can turn episodic migraine into chronic migraine (more than fifteen headache days per month over a three months period of which more than eight are migrainous, in the absence of medication over use, according to the International Headache Society).

In this study, our aim was to determine the prevalence and characteristics of migraine in

medical and non-medical students of Hail University, KSA and to assess their knowledge about the disease, then address the homogeneity and heterogeneity with the published data.

PARTICIPANTS AND METHODS

Study design, setting, period and target population:

The present cross sectional community based study was conducted in Hail University. The study included 800 students; 332 medical and 468 non medical students formed the study group.

Data collection:

Data was collected by using pre designed questionnaire which include questions designed to fulfill the study objectives. The questionnaire was focusing on demographics, pain characteristics, accompanying factors, triggers, and knowledge about migraine. Lifestyle variables were enquired and migraine associated absenteeism. The diagnosis of migraine was made according to the International Headache Society criteria.

Statistical analysis

Data were compiled and analyzed using statistical package for the social sciences (SPSS, version 16), results were analyzed with frequencies.

Ethical considerations

Permission to conduct the study was obtained from the Research and Ethics Committee at the College of Medicine, Hail University, Hail, Saudi Arabia. The questionnaire had a brief introduction explaining the aims and significance of the study. Participants were informed about the study objectives. The participation was completely voluntary no name was recorded on the questionnaires.

RESULTS

The students' awareness of migraine was good, as 48.9% of non medical and 84.6% of medical

students had a good background. The prevalence of migraine in all students was 35.4% (Table 1)

Regarding family history, 18.7% of nonmedical student said that migraine is hereditary disease and 28.6% for medical students. Regarding to causes of migraine this study reported loss of exposure to sunlight 9.1%, prolonged sleeping hours 29.5%, prolonged use of computer or mobile 29.5%, smoking 5.8% and sedentary life and irregular exercises 14.9% for non medical students and 7.1%, 14.3%, 28.6% and 14.3% respectively for medical students. (Table 2)

The prevalence of migraine was 51.5% among non medical students and 12.7% among medical students. However the prevalence was 80.1% of males and 61.9% in females. About half (44.4%) of medical and 45.2% of non medical had the first attack at 18-22 years. In 20.7% of non medical and 31.0% of medical had migraine attack lasting 5-12 hours. (Table 3)

Table (4) illustrates symptoms before, during and after the attack and factors increasing, reliving and preventing the pain and analgesics of migraine among the studied cases of medical and non medical students. Forty one point five percent of non medical and 38.1% of medical students had neck stiffness as accompanying symptoms. Trigger factors were prolonged sleeping and irregular exercises in 29.5% of non medical and 16.6% of medical students. Pain of migraine radiated to the back of the head in 26.1% of non medical and 14.3% of medical students. As regards factors relieving pain of migraine our study reported comfort, exercise, dark and analgesics 41.5%, comfort, vomiting, darkness 19.9%, vomiting and sleeping 12.4% and comfort, exercise, analgesics 26.1% for non medical students; 19%, 21.4%, 21.4% and 38.1%, respectively for medical students, taken tea and coffee reported by the same percent in two groups 28.6%. Regarding drugs, our study found that acetaminophen (paracetamol) was the most common drug used for migraine it was reported by 57.3% for non medical and 26.2% for medical students.

Table 1: sex, background and prevalence of migraine among the studied medical and non medical students, Hail, KSA, 2018

	Variables	Non medical students (N=468)		Medical students (N=332)	
		Frequency (No.)	Percent (%)	Frequency (No.)	Percent (%)
Sex	Male	136	29.1	212	63.9
	Female	332	70.9	120	36.1
Having background on Migraine	Yes	229	48.9	281	84.6
	No	239	51.1	51	15.4
Presence of migraine	Yes	241	51.5	42	12.7
	No	227	48.5	290	87.3

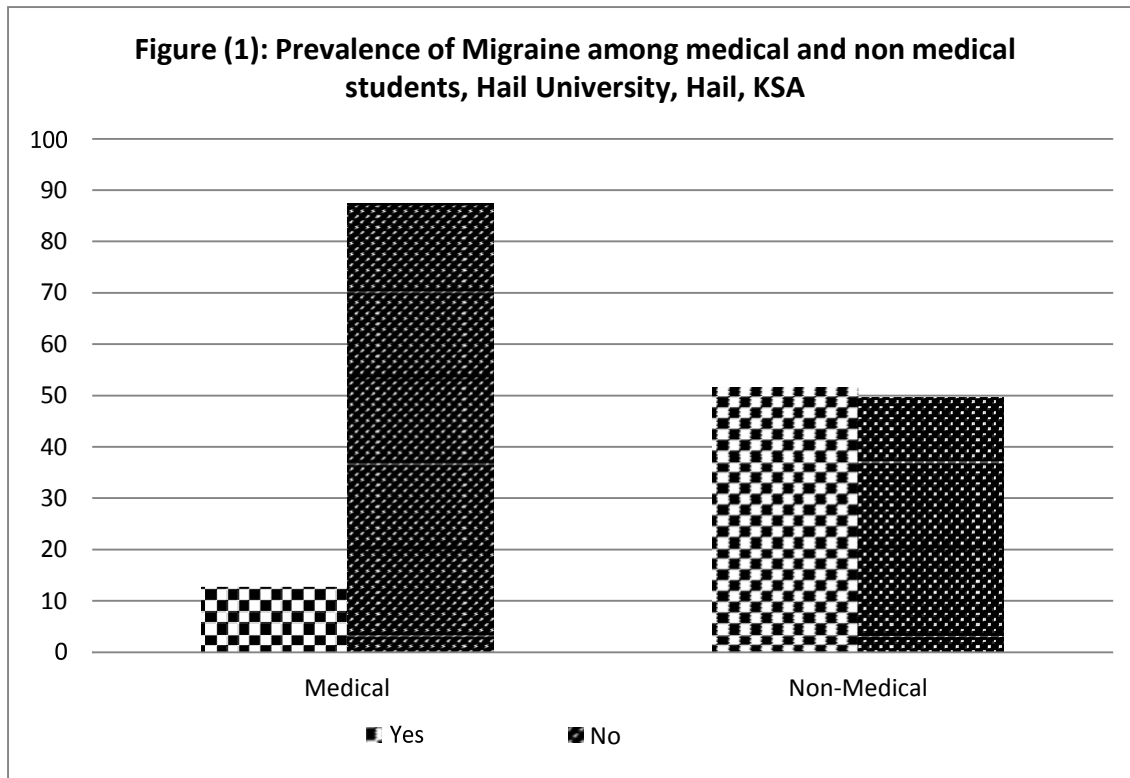


Table 2: knowledge about background, risk factors, causes, symptoms, relation to weather, season, sedentary life, smoking, contraceptive pills and analgesics among migraine cases of medical and non medical students

Variables	Non medical students (N=241)		Medical students (N=42)	
	Frequency (No.)	Percent (%)	Frequency (No.)	Percent (%)
Having background on Migraine				
Yes	107	44.4	2	4.8
No	134	55.6	40	95.2
Knowledge about the risk factors				
Yes	48	19.9	25	59.5
No	193	80.1	17	40.5
Knowledge about symptoms of migraine				
Blurring of vision	80	33.2	10	23.8
Burning sensation in the chest and shoulders	72	29.9	12	28.6
Teeth pain	72	29.9	8	19.0
Pain in one side of the head	44	18.3	12	28.6
Knowledge about causes of migraine				
Loss of exposure to sunlight	22	9.1	3	7.1
Sedentary life and irregular exercises	36	14.9	6	14.3
Prolonged sleeping hours	71	29.5	6	14.3
Smoking	14	5.8	4	9.5
Obesity	13	5.4	4	9.5
Prolonged sleeping hours and irregular exercises	14	5.8	7	16.6
Prolonged use of computer or mobile	71	29.5	12	28.6
Is migraine related to season				
Yes	51	21.2	11	26.2
No	83	34.4	14	33.3
I don't know	107	44.4	17	40.5
Is migraine related to weather				
Always	6	2.5	1	2.4
Sometimes	127	52.7	19	45.2

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Variables	Non medical students (N=241)		Medical students (N=42)	
	Frequency (No.)	Percent (%)	Frequency (No.)	Percent (%)
Not related	108	44.8	22	52.4
Is migraine hereditary disease				
Yes	45	18.7	12	28.6
No	82	34.0	18	42.9
Don't know	114	47.3	12	28.6
Is migraine related to sedentary life				
Yes	130	53.9	26	61.9
No	111	46.1	16	38.1
Is migraine related to smoking				
Yes	185	76.8	33	78.6
No	56	23.2	9	21.4
Are contraceptive pills increases migraine				
Yes	60	24.9	18	42.9
No	20	8.3	3	7.1
I don't know	161	66.8	21	50.0
Are analgesics the only way				
Yes	86	35.7	11	26.2
No	111	46.1	24	57.1
I don't know	44	18.3	7	16.7

Table 3: sex and manifestations of migraine cases of medical and non medical students, Hail, KSA, 2018

Variables	Non medical students (N=241)		Medical students (N=42)	
	Frequency (No.)	Percent (%)	Frequency (No.)	Percent (%)
Sex				
Male	193	80.1	26	61.9
Female	48	19.9	16	38.1
Age at the first attack				
10-14	21	8.7	5	11.9
14-18	83	34.4	12	28.6
18-22	107	44.4	19	45.2
22-25	22	9.1	4	9.5
6-10	8	3.3	2	4.8
Duration of migraine attack (in hours)				
12-24	19	7.9	5	11.9
3 - 4	90	37.3	11	26.2
5- 12	50	20.7	13	31.0
< 2	54	22.4	7	16.7
>24	17	7.1	5	11.9
> 1 week	11	4.6	1	2.4
Side of migraine				
Both sides	87	36.1	17	40.5
More to the left	68	28.2	9	21.4
More to the right	86	35.7	16	38.1
Pain of migraine radiated to				
Nose	6	2.5	7	16.7
Back of the head	63	26.1	6	14.3
Behind the left eyebrow	31	12.9	7	16.7
Behind the right eyebrow	48	19.9	8	19.0
Behind the left eye	30	12.4	1	2.4
Behind the right eye	63	26.1	1	2.4
Having insomnia because of the migraine				
Always	28	11.6	3	7.1
Sometimes	99	41.1	18	42.9
Not related	114	47.3	21	50.0

Table 4: Symptoms before, during and after the attack and factors increasing, reliving and preventing the pain and analgesics of migraine among the studied cases of medical and non medical students, Hail, KSA

Variables	Non medical students (N=241)		Medical students (N=42)	
	Frequency (No.)	Percent (%)	Frequency (No.)	Percent (%)
Symptoms before the attack of migraine (Prodromal)				
Neck stiffness	100	41.5	16	38.1
Vomiting and eye lacrimation	48	19.9	9	21.4
Drowsiness	30	12.4	9	21.4
Blurring of vision	63	26.1	8	19.0
Symptoms during the attack of migraine(Aura)				
Nausea and vomiting	127	52.7	18	42.9
Visual disturbances, such as flashes of light or wavy, zigzag vision.	108	44.8	21	50.0
Hearing noises	6	2.5	3	7.1
After a migraine attack (post-drome)				
Confusion	6	2.5	7	16.7
Moodiness	63	26.1	1	2.4
Dizziness	31	12.9	7	16.7
Weakness	48	19.9	8	19.0
Sensitivity to light and sound	30	12.4	6	14.3
Factors reliving the pain of migraine				
Comfort, exercise, dark and analgesics	100	41.5	8	19.0
Comfort, vomiting, darkness	48	19.9	9	21.4
Vomiting and sleeping	30	12.4	9	21.4
Comfort, exercise, analgesics	63	26.1	16	38.1
Factors increasing the pain of migraine				
Light, weather changes, specific smells and noise	69	28.7	9	21.4
Coughing, weather changes and noise	61	25.3	14	33.3
Nuisance, atmospheric changes, specific type of smells	48	19.9	7	16.7
Preventive measures to guard against attacks				
Muscle relaxation	67	27.8	13	31.0
Muscle relaxation, analgesics and exercise	163	67.6	10	23.8
Muscle exercise only	11	4.6	19	45.2
Types of food items provoking migraine				
Cold food as ice cream	87	36.1	13	31.0
Tea and coffee	69	28.6	12	28.6
Chocolate, salty food	13	5.4	8	19.0
Takeaway meals	72	29.9	10	23.8
Types of analgesics used				
Acetaminophen	138	57.3	11	26.2
Acetaminophen, Ergotamine	35	6.2	7	16.6
Acetaminophen, Non pharmaceutical	25	.4	6	14.3
Acetaminophen, NSAIDs, Ergotamine, Opioids, non pharmaceutical	48	19.9	18	42.9

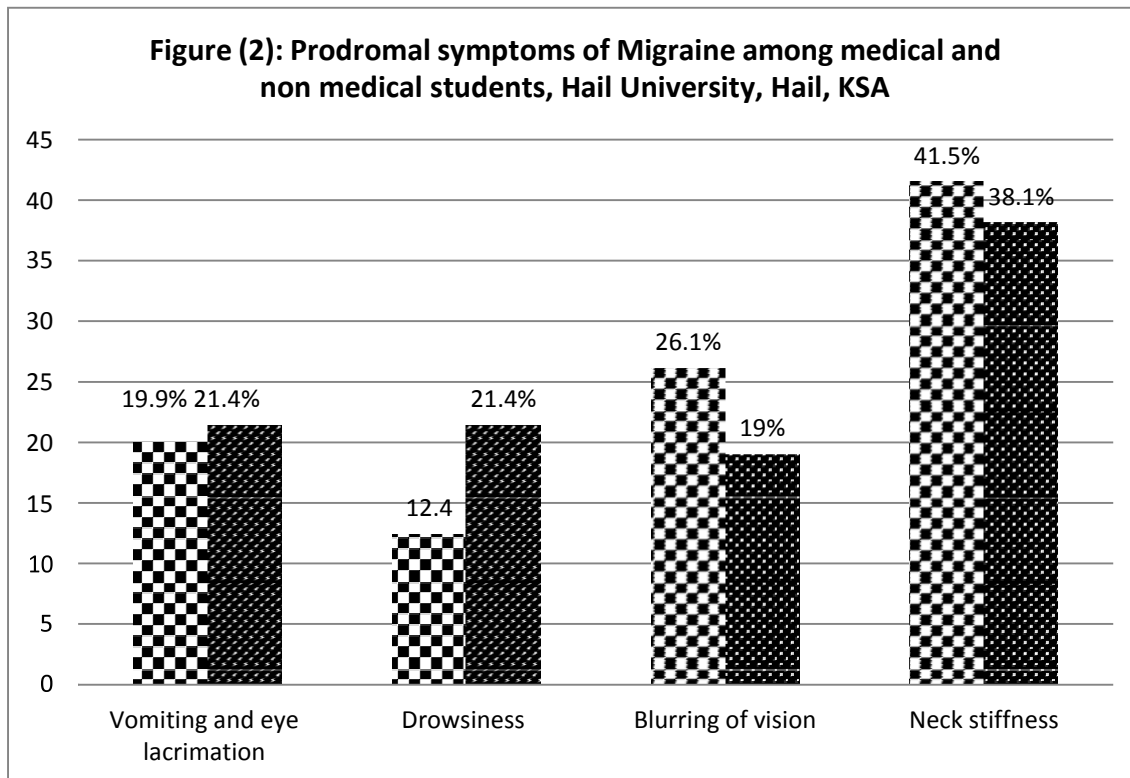


Table 5: Absenteeism due to migraine and effect of migraine on choosing certain specialty among the studied cases of medical and non medical students, Hail, KSA, 2018

Variables	Non medical students (N=241)		Medical students (N=42)	
	Frequency (No.)	Percent (%)	Frequency (No.)	Percent (%)
Absenteeism from college due to migraine (in days)				
15-21	3	1.2		
4-7	34	14.1	5	11.9
8-14	9	3.7		
< 3	192	79.7	37	88.1
> 21	3	1.2		
Absenteeism from student activities due to migraine (in days)				
4-7	43	17.8	4	9.5
< 3	187	77.6	37	88.1
8-14	11	4.6	1	2.4
Effect of migraine on choosing certain specialty				
No	208	86.3	36	85.7
Yes	33	13.7	6	14.3

DISCUSSION

Migraine is a neurological disorder that represents a significant global health problem due to its frequency and substantial disability [8]. Migraine has a prevalence of 12–18%, which has been shown to be both age and gender dependent in community-based studies worldwide [9]. Migraine is highly prevalent among university students and it is associated with impaired academic performance and limited daily activities [10].

This is across sectional study was conducted among 468 studied medical and 332 non medical students, Hail, KSA, 2018. The aim of this study was to investigate the prevalence and characteristics of migraine in medical and non medical students of Hail University, KSA and to assess their knowledge about the disease.

In this study the prevalence of migraine was 51.5% among non medical students and 12.7% among medical students. In Jeddah Saudi Arabia across sectional study conducted among 566 medical students, the prevalence of migraine headache was 26.3% [11]. In Riyadh, the prevalence of migraine was 25.7% among 400 students at king Saud University [13]. In Medinah, Kingdom of Saudi Arabia A cross-sectional study was conducted among 395 of undergraduate female students of Taibhu University, Migraine was detected among 244 (61.8%) of them [12].

A cross-sectional, questionnaire-based study was conducted on 621 students of the faculty of Medicine, Kuwait University the prevalence of migraine among medical students was 27.9% [14]. In South India a study was conducted in a medical college among 500 students, the prevalence of migraine in the whole cohort was 28%; however, of the headache group, migraine constituted 42% [15]. In Bandar Abbas, Southern Iran sectional study conducted among 350 medical students, the prevalence of migraine was 16.3% [16]. In Turkey a study was conducted with students of the Medical Faculty at Cumhuriyet University in Sivas, migraine prevalence among the medical students was 12.6 % [17]. A cross-sectional and descriptive study was conducted among 3694 university students in Edirne, a Turkish city, Migraine-type headache was detected in 266 subjects (7.2%) [18]. In Oman a study conducted among medical students at Sultan Qaboos University reported, the prevalence rate of migraine was (12.2%) [19]. The prevalence of migraine among university students is reported to be 8.9% in a Croatian study among 314 students, 7.0% in a Norwegian study among 5847 students [20, 21].

As regards family history, our study reported that 18.7% of nonmedical student said that migraine is hereditary disease and 28.6% for medical students. Another study found that family history has an important role in the prevalence of migraine, because 53.3 % of migraineurs had positive family history of migraine with highly significant association ($p < 0.0001$) [14]. Another study found that participants with family history of migraine were 3.64 times more prone to have it compared to others [13]. Another study found that 71% of the student with migraine had family history of headache [22].

Regarding to causes of migraine this study reported loss of exposure to sunlight 9.1%, prolonged sleeping hours 29.5%, prolonged use of computer or mobile 29.5%, smoking 5.8% and sedentary life and irregular exercises 14.9% for non medical students and 7.1%, 14.3%, 28.6% and 14.3% respectively for medical students. Another study reported, stress (24.9%), irregular sleep (20.8%), and substantial reading (18.5%) were the most common triggers for headache followed by exams (11.1%), smoking (5.8%) and fasting (5.8%) [16]. Another study reported migraine triggers were exam stress (82.6%), sleep disturbance (79.9%), emotional stress (73.2%), noise (71.1%), bright lights (69.1%), extended reading hours (64.4%) and smoking (16.1%) [13].

As regards factors relieving pain of migraine our study reported comfort, exercise, dark and analgesics 41.5%, comfort, vomiting, darkness 19.9%, vomiting and sleeping 12.4% and comfort, exercise, analgesics 26.1% for non medical students; 19%, 21.4%, 21.4% and 38.1%, respectively for medical students, taken tea and coffee reported by the same percent in two groups 28.6%. Another study showed that most important relieving factors were rest and sleep in (63.5%), using medication in (33.2%), followed by darkening room in (30.3%), message in (20.1%), and coffee drink in (18%) of migraine students [14].

Regarding drugs, our study found that acetaminophen (paracetamol) was the most common drug used for migraine reported by 57.3% for non medical and 26.2% for medical students. Another study reported that Paracetamol was the most commonly (66.7%) used medication group [13]. Another study reported Acetaminophen (83.1%) followed by Mefenamic acid (24.6%) were the most commonly used drugs for migraine [29].

CONCLUSION

Our study found a high prevalence of migraine in non medical and medical students. The students' awareness of the disease was good and most of the students resorted self-medication. Our study identified previously less-recognized triggers like prolonged sleeping hours and accompanying symptoms like neck stiffness.

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