PREVALENCE OF MIGRAINE, ITS COMMON TRIGGERING FACTORS AND COPING STRATEGIES IN MEDICAL STUDENTS OF PESHAWAR

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ABSTRACT

Objectives:

- *To assess the prevalence of migraine in medical students*
- *To find out the common triggering factors for migraine in medical students*
- *To find out the common coping strategies for migraine in medical students.*

Methodology: *This cross sectional study was conducted during academic year 2012. A self-administered questionnaire was distributed among 500 medical students of selected medical colleges of Peshawar. Students were selected randomly from each professional year. Response rate was 81% (n=405; 188=male, 217=females). The Questionnaire included demographic data such as age, gender, family history questions on headache based on the international Headache Society. Data was analyzed using SPSS version 20. Frequency and percentages were calculated for various variables.*

Result: *Prevalence of migraine in medical student was 38.3% (41.93% in females and 34.04% males) The most common triggering factors were stress (93.54%), noise (73.54%), change in sleep patterns (62.58%), missed meal (60%%), tiredness (53.54%), physical activity (50.96%), flickering light (48.38%), caffeine (41.29%), cheese (32.90%), smell (32.90%), chocolate (25.16%). About coping strategy we found that 87/155 (56.12%) students were using medicine, 31(20%) going to sleep, 9(5.80%) rest for couple of hours and 8(5.16%) take medicine and go to sleep and other 20 (12.90%) have no copping strategy.*

Conclusion: *The prevalence of migraine in medical students is quite high. Modification of the common triggering factors like stress, noise and change in sleep patterns can help in reducing the frequency and severity of migraine. The majority of the students were taking medicines to cope up with their migraine problem.*

Keywords: *headache, migraine, stress, migraine triggers, copping strategies, medical students.*

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INTRODUCTION

Headache is one of the most common health issues in all countries with increasing number of cases.[1] Migraine is a chronic neurological disorder which makes daily activities less functional and also has a negative effect on quality of life.[2] It is a complex condition with many patho-physiological mechanisms, such as hypothalamic dysfunction and a possible hyper dopaminergic state.[3] It usually starts during childhood or during puberty and remains with the patient for their whole life, its occurrence in the general population is about 12%, affecting more females (18%) than males (6%). In females it occurs during their reproductive phase (20–50 years old). Migraine not just affects one's life but that person is also a burden on the community.[4] In 2001, World Health Organization (WHO) listed migraine in the top 20 illnesses which cause disability.[5] The migraine diagnostic criteria defined by the international headache society[6] are now widely accepted and have applied successfully to studies on the epidemiology of migraine in adults.[7]

Migraine patients might suffer from anxiety between attacks due to fear of the next attack. Thus it is a continuous struggle of treating one attack and fearing the next. This decreases the quality of lifestyle.[8] Triggers causing neuronal hyper excitability should be recognized. Research shows that stress, sleeplessness, eating habits, menstrual cycle, frequent travelling, and others are main causing agents of migraine.[9] Life of a medical student is full of stresses related to heavy work load, studies, examination and emotional reactions to interpersonal relationships and socioeconomic conditions.[10] Headache is very common in medical students[11-13] and it has been shown that 40% of medical students had various types of headache and 40.2% of these headaches were migraine.[14]

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However prevalence of migraine in medical students has been reported as 7.14% from Iran[14] and 14.1% from Nigeria.[15] In Pakistan much higher frequency of Migraine (37.5%) has been reported among postgraduate medical students.[17]

This study was conducted to assess the prevalence of migraine, common triggering factors & coping strategies in a sample of undergraduate medical students of Peshawar, as defined by the international headache society criteria and validation of the questionnaire responses with clinical interviews.

METHODOLOGY

Population History;

Students from all medical colleges of Peshawar were included. Peshawar has a total number of approximately 3150 medical students. Students from different classes were included in the study. Students who were not present for any reason during data collection were excluded.This cross-sectional questionnaire -based study was conducted on medical students in Peshawar. 500 questionnaires were distributed randomly; all received verbal information about the purpose of the study before participating which was totally voluntarily. 405 medical students completed and returned the questionnaire. The response rate was 81%.

Samples Population & Size:

Medical students participated in this survey were simple randomly selected from different medical colleges of Peshawar. The male participants were 188 and the females were 217. This survey was conducted during an academic year 2012.

Study Duration:

The study duration was from December 2011 to March 2012. During these four months the following activities were conducted: data collection, analysis, making inference about the result and providing recommendations based on study findings.

Data Collection:

The data of this survey was collected from the students' self-reports by filling the questionnaires. The questionnaires included demographic data, such as: age, gender family history of headache, and specific questions about headache based on the international Headache Society.[18] Also different characteristics of headaches such as: frequency, duration, location, quality, and intensity of pain, influence of physical activity work intensity nausea, vomiting, and photophobia and different Triggering factors such as: stress, noise, tiredness, dietary pattern, missed meal chocolate etc. were questioned.

Those medical students, who responded positively to the entire Headache questions were in migraine criteria, were asked some more question based on the international Headache Society (IHS). Migraine was diagnosed on the IHS diagnostic criteria[19] (table 1).

Data analysis:

Statistical analysis was performed by using the Statistical Package for Social Science (SPSS) version 20. Continuous data were displayed as the mean ± standard deviation, while the categorical and nominal data were presented as frequencies and percentages.

RESULT

Total 405 students participated in the study from all medical colleges in Peshawar. Out of the total 405 students, there were 188(46.4%) males and 217(53.6%) females. Age of the male participants ranges from 17-24 with a mean of 20.91 ± 1.63 years and for female range from 17-24 with a mean of 20.54 ± 1.46 years.

Migraine was found in 155 (64 male, 91 female). Migraine prevalence in medical student was found to be 38.3% (table 2). The female to male ratio was found to be

INTERNATIONAL HEADACHE SOCIETY (IHS) DIAGNOSTIC CRITERIA OF MIGRAINE

	Diagnostic Criteria	
A.	At least 5 attacks fulfilling criteria B-D	
B.	Headache attacks lasting 4-72 hours (untreated or unsuccessfully treated)	
C.	Headache has at least two of the characteristics	1. unilateral location
		2. pulsating quality
		3. moderate or severe pain intensity
		4. Aggravation by or causing avoidance of routine physical activity (e.g., walking or climbing stairs)
D.	During headache at least one of the following	1. nausea and/or vomiting
		2. photophobia
E.	Headache not attributed to another disorder	

Table I

PREVALENCE OF MIGRAINE IN MEDICAL STUDENT

	Male (n=188)		Female (n=217)		Total (n=405)	
	Frequency	%age	Frequency	%age	Frequency	%age
With migraine	64	34.04%	91	41.93%	155	38.3%
Without migraine	124	65.95%	126	58.06%	250	61.72%

Table II

DISTRIBUTION OF TRIGGER FACTORS IN MIGRAINE PATIENTS ACCORDING TO GENDER

Triggers	Male		Female		Total	
	Frequency (n=64)	%age	Frequency (n=91)	%age	Frequency (n=155)	%age
Stress	60	93.75%	85	93.40%	145	93.54%
Noise	44	68.75%	70	76.92%	114	73.54%
change in sleep patterns	36	56.25%	61	67.03%	97	62.58%
Missed meal	40	62.5%	53	58.24%	93	60%
Tiredness	34	53.12%	49	53.84%	83	53.54%
Physical activity	40	62.5%	39	42.85%	79	50.96%
Flickering light	32	50%	43	47.25%	75	48.38%
Caffeine	24	37.5%	40	43.95%	64	41.29%
Cheese	17	26.56%	34	37.36%	51	32.90%
Smell	17	26.56%	34	37.36%	51	32.90%
Chocolate	18	28.12%	21	23.07%	39	25.16%

Table III

NUMBER AND PERCENTAGE DISTRIBUTION OF COPING STRATEGIES IN MIGRAINE PATIENTS ACCORDING TO GENDER

	Male		Female		Total	
	Frequency (n=64)	%age	Frequency (n=91)	%age	Frequency (n=155)	%age
Take medicine	38	59.37%	49	53.84%	87	56.12%
Sleep	13	20.31%	18	19.78%	31	20%
Rest	3	4.6%	6	6.59%	9	5.80%
Take medicine and sleep	4	6.25%	4	4.39%	8	5.16%
None	9	14.06%	11	12.08%	20	12.90%

Table IV

as 1.4:1. Mean number of attacks per month was 5.0 ± 2.5.

The most common triggering factors were stress (93.54%), noise 73.54%, change in sleep patterns (62.58%), missed meal (60%%), tiredness (53.54%), physical activity (50.96%), flickering light (48.38%), caffeine (41.29%), cheese (32.90%), smell (32.90%), chocolate (25.16%). Table 3, is showing the distribution of main trigger factors in male and female students with migraine.

In response to the question about coping strategy we found that 87(56.12%) out of 155 were using medicine, 31(20%) go to sleep, 9(5.80%) rest for a couple of hours and 8(5.16%) take medicine and go to sleep and other 20(12.90%) have no copping strategy, table 4 shows coping strategies in male and female medical students

having migraine.

DISCUSSION

To our knowledge, migraine has not been previously the subject of an investigation in medical students of Peshawar. This is the first study of its kind conducted on prevalence of migraine in medical students at Peshawar.

The result of the present study based on international headache society (IHS) criteria (2004), showed that the migraine prevalence in medical students of Peshawar was 34.04%. Epidemiological studies have suggested that age, sex, genetic characteristics, and socio-culture differences affect the prevalence of migraine.[20] Several international studies using the IHS diagnostic criteria have shown that the lifetime prevalence of migraine was found to be at 4-8% in male and 11-25% in female in the general population.[21]

Migraine prevalence in our study was 34.04% which is much lower than 11.01% showed by Yusufy M in medical students of zanjan (Iran).[22] Mehmet Kemal in his study showed that the prevalence of migraine in university student of turkey was 12.4% (14.0% women and 8.9% in men); [23] This variation in the prevalence rate of migraine may be due to different socioeconomic, climatic, nutrition habits or any stressor which could prompt migraine headache factors in these countries on medical students. This variance of outcome could be the result of different kind of university, different teaching method and different exam pattern.

Our study shows that the occurrence of migraine in females is higher than in men (41.93% in females vs 34.04% in males). Sanvito WL also reported a higher frequency of migraine in women than in men.[14]

Our students had experienced 5±2.5 attacks within a month which is almost consistent with findings of Bigal ME et al showing the number of attacks as 4.5 for per month. [24]

In this study, triggering factors like stress, noise, sleep disturbance, missed meal and tiredness were found to be the most common. This finding is supported by Kutlu A et al in his study stress, noise; sleep disturbance and fatigue were found to be the most common trigger factors in migraine patients in turkey.[25]

Physiological stress is generally major contributor to headaches. Stressor factors are the most common trigger factors.[26-28] In our study triggering factor "stress" was more common in female patients than male.

In our study triggering factor "noise" is second most common. Martin in his article showed that the individuals suffered from regular headache had a lower tolerance for noise stimulus than the individual who did not suffer from headache. According to LARES study noise annoyance in houses, neighbourhoods and traffic increased risk of migraine in adults.[29]

In our study Sleep disorders were the third most common trigger factor. Kelman has studied the relationship between sleep & migraine, and implicated sleep disturbance in specific headache patterns and severity.[30] The hypothalamus is a part of the central autonomic network, controlling pain and body homeostasis. The chronobiological features of some headaches are likely represented by the neural site of hypothalamus and interconnected brainstem. [31]

Tiredness was the next most common trigger in our study. Tiredness was mentioned as a trigger factor only by Giffin. He found, feeling tired and weary as the most common premonitory symptoms in their study.[32] Physical activities appeared in 50.96% of patients in our study.

In our study, visual stimuli like flickering light reported. Migraine sufferers may be more sensitive to light, and the one with chronic headache are more sensitive to sunlight, even when they are headache-free.[33]

Nicotine is one of the other environmental trigger factors. Iribarren C et al have reported a statistically significant increase in severe headaches correlating with total tobacco smoke exposure time.[34] Although cigarette smoke is a reported trigger for many migraineurs, in this study it was 41.29%.

In our study missed meal and smell and dietary pattern was next triggers of migraine. Scanty research is founded on missed meals as a trigger for migraine. Amery and Van den Bergh in their research showed that, not eating on time, neck pain and odour can cause chronic migraine.[35]

Each individual has different factors, in each attack and one may have different trigger factors in different attacks and some have the multiple triggering factors. We know that the prophylactic treatment of migraine (e.g. calcium channel blockers, beta blockers) decreases the frequency of headaches by affecting various factors.[36] We assume that these factors originate from a single centre in the brain, like the hypothalamus.

In our finding most of the students take medicine to cope with migraine, the other coping strategies was sleep, rest and some have multiple coping strategies. Ong JC has shown in his research that medication use as a coping strategies for headache was not significantly different in people with tension type headache and control groups while going to sleep was the most frequently used coping strategy by females suffering from headache.[37]

CONCLUSION

The present study showed that the prevalence of migraine in medical students of Peshawar is more than the other medical students and Stress, noise; sleep disturbance was the most common migraine triggering factors.

In conclusion, trigger factors are frequent, its detection must be detailed, and so preventive treatment could be more efficient. Avoiding migraine triggers factor can possibly decrease headache frequency and also po-

tentially improve patients' quality of life

A global education program may be required for patients to recognize the importance of effective migraine treatment. Informing patients about the disease through informative programs is not only an important step in the treatment of migraine attacks, but also reduces disability from migraine.

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AUTHOR'S CONTRIBUTION

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