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## Migraine: sociodemographic characteristics and psychiatric comorbidity of the patients

Munira Parveen, Aunika Jabunnasa, Md Habibur Rahman, A S M Kowser

**Background:** Migraine afflicts approximately 8-10% of general population. It is associated with a considerable psychiatric morbidity.

**Objectives:** To explore the sociodemographic characteristics and psychiatric comorbidities of migraine patients.

**Methods:** It was a cross-sectional, observational study which was carried out in 2020 at the Department of Psychiatry and Department of Neurology of Combined Military Hospital, Dhaka, Bangladesh. By convenient sampling technique, 400 migraine patients were recruited. A semi-structured questionnaire for sociodemographic and relevant information and General Health Questionnaire-12 (GHQ-12) were used for data collection. Psychiatric diagnoses were made by psychiatrists using DSM-5 criteria.

**Results:** Among the 400 migraine patients, 148 (37%) had psychiatric comorbidity. Majority (45.9%) were diagnosed as cases of major depressive disorder followed by obsessive-compulsive disorder (37.9%), anxiety disorders (13.5%) and other psychiatric disorders (2.7%).

**Conclusions:** Psychiatric morbidity was highly prevalent among migraine patients and among the psychiatric disorders, mood and anxiety disorders were common.

**Declaration of interest:** None

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**Keywords:** Migraine; comorbidity; sociodemographic characteristics; General Health Questionnaire.

### Introduction

Migraine is a type of headache disorder characterized by periodic, commonly unilateral, often pulsatile, which begins in childhood, adolescence or early adult life and recur with diminishing frequency with advancing years.<sup>1</sup> World Health Organization declared migraine to be among the most disabling medical conditions experienced world-wide. Migraine afflicts approximately 8-10% of the general population. It is episodic in nature, with some patients experiencing one attack annually while others experience several attacks in a week. Aura occurs in about

15 to 20% of the patients with migraine and the intensity of aura varies among the attacks. Migraine is 2-3 times more common in women than in men.<sup>2,3</sup> The initial attack most commonly occurs during adolescence and before 40 years of age. It is a markedly disabling condition, most frequently seen in primary care.<sup>4,5</sup>

A family history of migraine is present in up to 90% of the patients. Once migraine has developed, it tends to recur with varying frequency throughout much of a patient's life.

Attacks have a tendency to get milder and occur less often in later years although this certainly is not a universal finding.<sup>6</sup>

Association between migraine and a variety of psychiatric conditions has been reported in various literature. The association of migraine with depression and anxiety disorder has been consistently reported.<sup>7</sup> One study showed that psychiatric morbidity among migraine patients was 23.7% in our country.<sup>8</sup> Breslau showed in their study that the most important comorbidity of migraine is major depressive disorder which affects as many as 40% of the patients with migraine.<sup>9</sup>

## Methods

The study was a cross-sectional, observational study which was carried out from 1st January to 30th June 2020 in the Department of Psychiatry and Department of Neurology of Combined Military Hospital, Dhaka, Bangladesh. By convenient sampling technique, 400 migraine patients were recruited who were  $\geq 18$  years of age. Patients who were mute, stuporous, non-communicable, had cognitive impairment or had severe medical illness, were excluded from the study. A semi-structured questionnaire was used for collecting sociodemographic and relevant information. General Health Questionnaire-12 (GHQ-12) was used to detect individuals with a diagnosable psychiatric disorder. The GHQ-12 consists of 12 statements to which respondents answered on a four-point scale (0 = not at all to 3 = more than usual) and a cut-off score of  $\geq 12$  was considered for further evaluation. GHQ-12 screened positive patients were further evaluated by research psychiatrists and diagnosed according to DSM-5 criteria.

## Results

Majority of the migraine patients were in 30-39 and 20-29 year age groups (38% and 36%, respectively), females (72%), came from urban areas (71%), Muslims (92.7%), completed HSC education (28%), housewives (44.5%) and married (67%). The details of the sociodemographic characteristics of the patients are given in Table 1.

Among the 400 migraine patients, 148 (37%) were diagnosed with a psychiatric disorder according to DSM-5 criteria. Psychiatric disorders were present in 38.9% females and 32.1% males ( $p=0.383$ ). Family history of psychiatric illness was present in 16% of the patients.

**Table 1: Sociodemographic characteristics of migraine patients attending CMH, Dhaka (N=400)**

Characteristic	Frequency (n)	Percentage (%)
<b>Age group (year)</b>		
<20	60	15
20-29	144	36
30-39	152	38
40-55	44	11
<b>Sex</b>		
Male	112	28
Female	288	72
<b>Residence</b>		
Urban	284	71
Rural	116	29
<b>Religion</b>		
Islam	371	92.7
Hinduism	27	6.7
Others	2	0.5
<b>Education</b>		
Illiterate	32	8
Primary	100	25
SSC	108	27
HSC	112	28
Graduate & above	48	12
<b>Occupation</b>		
Housewife	178	44.5
Student	84	21
Service	92	23
Others	46	11.5
<b>Monthly income</b>		
<15,000	88	22
15,000-30000	184	46
>30000	128	32
<b>Marital status</b>		
Married	268	67
Unmarried	96	24
Others	36	9

Table 2 shows the pattern of psychiatric morbidities among migraine patients.

**Table 2: Psychiatric morbidity in migraine patients attending CMH, Dhaka (n=148)**

Psychiatric disorder	Frequency (n)	Percentage (%)
Major depressive disorder	68	45.9
Obsessive-compulsive disorder	56	37.9
Anxiety disorders	20	13.5
Somatic symptom disorders	4	2.7
Total	148	100

Table 3 shows how psychiatric diagnoses differ across various sociodemographic characteristics. The p value was determined by chi-square test and for none of the differences were found to be statistically significant (i.e.,  $p > 0.05$ ).

**Table 3: Contingency table showing psychiatric diagnoses across various sociodemographic variables of migraine patients (N=400)**

Variable	With psychiatric disorder		Without psychiatric disorder	
	n	%	n	%
<b>Age (years)</b>				
<30	60	40.5	144	57.1
≥30	88	59.5	108	42.9
<b>Habitat</b>				
Urban	76	51.4	168	66.7
Rural	72	48.6	84	33.3
<b>Religion</b>				
Islam	144	97.3	227	90
Hinduism	04	2.7	23	9.1
Others	-	-	2	0.9

Variable	With psychiatric disorder		Without psychiatric disorder	
	n	%	n	%
<b>Education</b>				
Illiterate	8	5.4	24	9.5
Primary	37	25	63	25
SSC	42	28.4	66	26.2
HSC	53	35.8	59	23.4
Graduation & above	8	5.4	40	15.9
<b>Occupation</b>				
Housewife	88	59.5	90	35.7
Student	28	18.9	56	22.2
Service	24	16.2	68	26.9
Others	8	5.4	38	15.2
<b>Marital status</b>				
Married	88	59.5	180	71.4
Unmarried	32	21.6	64	25.4
Others	28	18.9	8	3.2
<b>Monthly income</b>				
5000-10000	48	32.4	40	15.9
10000-15000	72	48.6	112	44.4
>15000	28	19	100	39.7
<b>Family history of psychiatric illness</b>				
Yes	16	10.8	48	19.1
No	132	89.2	204	80.9
Total	148	100	252	100

**Discussion**

This was a cross-sectional, observational study where 37% of migraine patients had comorbid psychiatric disorders. Major depressive disorder, obsessive-compulsive disorder and anxiety disorders were the most common psychiatric diagnoses. A private clinic-based study in Bangladesh showed 23.7% psychiatric comorbidity among migraineurs.<sup>8</sup> A similar study was done by Guidetti, revealed 43.7% of migraine patients had comorbid psychiatric disorders.<sup>10</sup> Breslau showed in his study, 40% of migraine patients develop depressive disorder.<sup>9</sup>

Majority of the migraine patients were in 30-39 and 20-29 year age groups (38% and 36%, respectively). Habib et al.

found 40.2% of migraineurs were within the age range of 18 to 29 years and only 3.32% were above 50 years.<sup>11</sup> Mamun and Habib showed preponderance of females among migraine patients<sup>8,11</sup> and up to 70% of the women experience migraine around menstruation and in some cases, oral contraceptives can act as a trigger factor. Pregnancy can also improve or worsen migraine attacks. Distribution pattern of migraine patients didn't show statistically significant differences across marital status, level of education, occupation, monthly income or residence and similar findings were reported in others studies.<sup>8,11</sup>

## Conclusions

The current study demonstrates that psychiatric morbidity is highly prevalent among migraine patients and among the psychiatric disorders, mood disorders and anxiety disorders are common. Psychiatric comorbidity can affect migraine evolution, may change treatment strategies, eventually modifying the outcome of this important disorder.

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