

# Prevalence of Psychiatric Comorbidities in Patients with Migraine: A Cross-sectional Study

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## ABSTRACT

**Aim:** To evaluate the prevalence of psychiatric comorbidity in migraine patients.

**Materials and methods:** A total of 60 patients diagnosed with migraine according to the International Classification of Headache Disorders (ICHD-3) were included in the study and were interviewed for depression and mental disorders according to ICD-10 criteria. The migraine disability assessment (MIDAS) questionnaire was used to understand the impact of headaches on patients' lives and the disruption of daily activities.

**Results:** Migraine was more common in women, and while comorbid psychiatric disorders were detected in 42 patients (70%), dissociative disorder was the most common diagnosis (25%).

**Conclusion:** The incidence of psychiatric comorbidities is higher in migraine patients. Dissociative disorders are the most common psychiatric disorders, followed by depression.

**Keywords:** International classification of headache disorders, Migraine, Psychiatric comorbidity.

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## INTRODUCTION

Migraine is defined as "an episodic headache associated with specific characteristics, such as sensitivity to light, sound, or movement" or "a series of recurrent headaches that appear to be associated with different types of nerves associated with other nerves".<sup>1</sup> The word migraine comes from the Greek word "hemicrania", which later meant "half head". The French translation is "migraine". Migraine is one of the most common neurological diseases. Migraines differ from regular headaches in that patients often describe the pain as throbbing or a sharp pain affecting one side of the head. Migraine attacks are often accompanied by nausea or vomiting. Migraine affects more than 1 billion people worldwide every year.<sup>2</sup> The global 1-year prevalence of migraine is approximately 15%.<sup>3</sup> The highest rate is seen in Southeast Asia (25–35%) and the lowest rate is in China (9%).<sup>4</sup> Studies conducted in India show that the prevalence of migraine is close to the global prevalence (approximately 16%).<sup>5</sup> Migraine is the second leading cause of disability worldwide.<sup>6</sup> Women are more affected than men (17% vs 6%). Migraines often run in families.<sup>7</sup> Migraine diagnoses in India is difficult due to lack of information and most of the time the headache is not severe and taking over-the-counter medication without doctor's advice causes pain. The government healthcare system is very expensive and headache care is limited to secondary or tertiary care. On the other hand, treatment in the private sector is expensive and worthless.<sup>8</sup> Migraine doesn't just affect the body; it affects the patient's entire personality. It carries the financial burden of lost opportunities, reduced productivity, and direct and indirect costs. In addition to financial costs, negative effects of migraine include decreased school/work participation, concerns about work-related problems, impairment of social/recreational cognitive functioning, and conflicts within the family, especially with spouses and children.<sup>9</sup> It can also affect sexual life. Risk factors for migraines include stress, hormone

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imbalances, obesity, and inadequate sleep (insomnia, snoring), while suspected risk factors include: skipping meals, change of weather, alcohol, and bad odor.<sup>10</sup> In addition, other diseases such as stomach ulcers, gastrointestinal bleeding, epilepsy, angina, and psychological disorders such as anxiety and depression have also been shown to be associated with migraines.<sup>11</sup> Lifestyle changes, aerobic exercise, and yoga can improve migraines. It helps reduce the frequency, duration, and severity of migraine.<sup>12</sup> In recent years, awareness of the relationship between physical disability/illness and mental health has led researchers to consider migraine psychosis, a well-known but neglected mental health problem. The impact of migraines on daily life; may include fear, anxiety, irritability, slowness, changes in motor functions, sleep, anxiety, and depression. Migraine and mental disorders are associated with genetic and pathophysiological abnormalities such as serotonin and estrogen levels.<sup>13</sup> Psychiatric diseases accompanying migraines are well known. The majority of migraineurs (78%) claim to be in the psychiatric community. It has been determined that these patients need more than one treatment. Therefore, this study focused on

assessing the prevalence of psychiatric comorbidities in migraine patients, which may help modify treatment strategies.

## MATERIALS AND METHODS

This cross-sectional study was conducted at the Department of Psychiatry, Era's Lucknow Medical College and Hospital, Lucknow, Uttar Pradesh, over 1 year after getting approved by the ethical committee of the institution. Sixty consecutive patients diagnosed with migraine according to the international classification of headache disorders (ICHD-3) were interviewed for ICD-10 criteria for psychiatric comorbidities to assist with mental illness. All consecutive patients who met the inclusion and exclusion criteria and obtained informed consent were assigned to the study group. Sociodemographic and clinical data were recorded in a semi-structured performa designed for this study.

### Inclusion Criteria

- Patients giving informed consent.
- Patients diagnosed with migraine as per International Classification of Headache Disorders (ICHD-3rd edition) diagnostic criteria.
- Patients aged from 18–60 years of any gender.

### Exclusion Criteria

- Patient with major medical and surgical illnesses requiring immediate medical attention.
- Patient with a history of major psychiatric disorders before on set of migraines.

### Tools for Assessment

- Semi-structured performa containing sociodemographic and clinical variables associated with migraine.
- International classification of headache disorder – 3rd edition.
- International classification of disease 10 criteria.
- Migraine disability assessment (MIDAS).

The below Table 1 illustrates the sociodemographic profile of the study subjects. In the age distribution, a high preponderance of the age group between 20 and 30 years was noted in current study patients, with a mean age value of 28.4 years (SD  $\pm$  8.53). More females (53; 88.3%) than males (7; 11.7%) were found to be suffering from migraine. The higher number of patients was Hindu (34; 56.7%) by religion and belonged to an urban background (33; 55%). The maximum patients were educated till intermediate (25; 41.7%) were homemakers (32; 54.3%) and belonged to the nuclear family (41; 68.3%).

The below Table 2 illustrates that out of 60 patients, 41 (68.3%) patients presented with migraine without AURA.

The below Table 3 illustrates that the maximum number of the patients (31; 51.7%) had moderate disability.

The below Table 4 illustrates majority of intermediate migraine cases had mild-moderate disability (95.9%) while the majority of severe migraine cases had severe disability (90.9%) this difference was found to be significant statistically.

The below Table 5 illustrates out of 60 patients, 42 patients (70%) had a psychiatric illness, out of which a maximum number of patients had dissociative disorder (20; 25%), followed by depressive disorder in 8 patients (13.3%), generalized anxiety disorder in 7 patients (11.6%), mixed anxiety and depressive disorder in 5 patients (8.3%), a panic disorder in 4 patients (6.6%), anxiety disorder unspecified in 3 patients (5%), and 1 patient had agoraphobia.

**Table 1:** Distribution of sociodemographic variables

S. No	Parameter	No. of patients	%
1	Age group		
	≤ 20 years	16	26.7
	21–30 years	20	33.3
	31–40 years	18	30.0
	≥ 41 years	6	10.0
	Mean age $\pm$ SD (range) years	28.40 $\pm$ 8.53 (18–52)	
2	Gender		
	Female	53	88.3
	Male	7	11.7
3	Marital status		
	Married	37	61.7
	Unmarried	22	36.6
	Widow	1	1.7
4	Domicile		
	Rural	27	45.0
	Urban	33	55.0
5	Occupation		
	Employed	4	6.6
	Farmer	1	1.7
	Homemaker	32	53.4
	Student	17	28.3
	Teacher	1	1.7
	Unemployed	5	8.3
6	Family type		
	Joint	19	31.7
	Nuclear	41	68.3
7	Religion		
	Hindu	34	56.7
	Muslim	26	43.3
8	Educational qualification		
	Illiterate	4	6.7
	Primary	2	3.3
	Secondary	3	5.0
	High school	8	13.3
	Intermediate	25	41.7
	Graduation	18	30.0
9	Family income (Indian rupees)		
	≤10,000	27	45.0
	10,001–20,000	29	48.3
	≥20,001	4	6.7

## DISCUSSION

Migraine is a chronic neurological disorder that has been associated with an increased risk of various psychiatric comorbidities. The impact of migraine on psychiatric disorders is bidirectional, with migraine contributing to the development and exacerbation of psychiatric conditions, and psychiatric comorbidities impacting the course and treatment of migraine. The high prevalence of

**Table 2:** Distribution of type of migraine

S. No	Type	No. of patients	%
1	With AURA	19	31.7
2	Without AURA	41	68.3

**Table 3:** Distribution of disability on MIDAS questionnaire

S. No	Disability	No. of patients	%
1	Little or no disability (0–5)	2	3.3
2	Mild disability (6–10)	17	28.3
3	Moderate disability (11–20)	31	51.7
4	Severe disability (>11)	10	16.7

**Table 4:** Association of migraine severity and disability as per MIDAS questionnaire

S. No	MIDAS	Intermediate severity		Severe	
		No.	%	No.	%
1	Little or no disability (0–5)	2	4.1	0	0.0
2	Mild disability (6–10)	17	34.7	0	0.0
3	Moderate disability (11–20)	30	61.2	1	9.1
4	Severe disability (>11)	0	0.0	10	90.9

$\chi^2 = 53.536; p < 0.001$

**Table 5:** Psychiatric comorbidities in patients of migraine as per ICD-10 criteria

S. No	Comorbidity	Psychiatric comorbidities as per ICD-10 criteria	N = 60	%
1	Comorbidity	Dissociative disorder	15	25
		Depressive disorder	8	13.3
		Generalized anxiety disorder	7	11.6
		Mixed anxiety and depressive disorder	5	8.3
		Anxiety disorder, unspecified	3	5
		Panic disorder	3	5
		Panic with agoraphobia	1	1.6
		42	70	
2	No comorbidity		18	30
	Total		60	100

psychiatric comorbidities in individuals with migraines highlights the need to overview the migraine from a psychiatrist's perspective. Therefore, the present study was conducted to find the prevalence of psychiatric comorbidities in patients with migraines (with and without AURA). The present study was conducted on sixty migraine patients, the sample size was proposed using scientific statistical tools. The study design was observational. Observational studies

are one of the most effective and inexpensive research designs that allow to recording of the data independently by monitoring the clinical course and events in the selected patients without interfering with their routine management strategies. It was found that age of patients ranged between 18 and 52 years, mean age was  $28.40 \pm 8.53$  years; majority were females (88.3%), married (61.7%), Urbanites (55.0%), Homemakers and students (81.7%), part of nuclear families (68.3%), followers of Hindu faith (56.7%) educated above 12th standard (71.7%) with monthly family income and gt; 10,000 Indian rupees. The age of onset ranged between 15 and 29 years, the mean age of onset was  $20.93 \pm 4.08$  years and the mean duration of migraine was  $7.47 \pm 6.00$  years (range: 1–25 years). Only 31.7% of patients had migraines with AURA ( $n = 19$ ). Moderate (51.7%) to Severe (16.7%) degree of disability was experienced by migraine patients by MIDAS. Out of 60 patients, 42 patients (70%) had psychiatric illness, out of which maximum number of patients had dissociative disorder (20; 25%), followed by depressive disorder in 8 patients (13.3%), generalized anxiety disorder in 7 patients (11.6%), mixed anxiety and depressive disorder in 5 patients (8.3%), panic disorder in 4 patients (6.6%), anxiety disorder unspecified in 3 patients (5%), and 1 patient had agoraphobia.

Kori and Ramdurg reported an incidence of psychiatric disorders in 75% of patients which was similar to the current study.<sup>14</sup> ICD-10 DCR criteria were used to diagnose psychiatric disorders. They enrolled 100 migraine patients of them 17% were with AURA, 33% had daily episodes of migraine, duration of migraine was  $25 \pm 18$  months only. The mean age of patients was  $35.4 \pm 4.6$  years, the majority were females (62%), literate (77%), married (56%), belonged to rural areas (56%), and Hindu (76%). Differences in patient characteristics in our study included older age, a lower proportion of women, married, urban, Muslim, and duration of migraine ( $7.47 \pm 6.00$  years). Various studies have reported mental disorders in up to 70–80%.<sup>15</sup>

Ismail and Fayaz reported that the incidence of depression (mental disorder) was 75.4%.<sup>16</sup> This included 90 migraine patients, 34.4% of whom had migraine with AURA. Most of them were over 35 years old (51%), female (74.5%), married (74.5%), highly educated (75.6%), unemployed (53.2%), and 17% had chronic health problems. They used the PHQ-9 to assess depressive disorders in patients.

Differences in outcomes for the sociodemographic variables mentioned above may simply reflect the population size of the hospital catchment area. This study had several limitations. The cross-sectional nature of the study does not allow for testing the direction of the effect. Case-control studies would be a more statistically reliable research method for accepting and generalizing findings of this nature. A second limitation is that the study was conducted in a hospital setting. Because the study was conducted on a small number of migraine patients, additional large-scale case-control studies and analysis designs are needed to generalize the results.

## CONCLUSION

The present study was conducted to find the prevalence of psychiatric comorbidities in patients with migraine. A total of 60 diagnosed patients of migraine were enrolled in the study. The age of patients ranged between 18 and 52 years, mean age was  $28.40 \pm 8.53$  years; the majority were females (88.3%), married (61.7%), urbanites (55.0%), homemakers and students (81.7%), part of nuclear families (68.3%), followers of Hindu faith (56.7%) educated above 12th standard (71.7%) with monthly family income >10,000

Indian rupees. The age of onset ranged between 15 and 29 years, the mean age of onset was  $20.93 \pm 4.08$  years and the mean duration of Migraine was  $7.47 \pm 6.00$  years (range: 1–25 years). Only 31.7% of patients had migraines with AURA ( $n = 19$ ). Moderate (51.7%) to severe (16.7%) degree of disability was experienced by migraine patients (assessed by MIDAS). Out of 60 patients, the prevalence of psychiatric disorder was 70% i.e., in 42 patients, 25% had dissociative disorder ( $n = 20$ ), 13.3% ( $n = 8$ ) patients had the depressive disorder and 11.6% ( $n = 7$ ) had generalized anxiety disorder, 8.3% had mixed anxiety and depressive disorder ( $n = 5$ ), a panic disorder in 6.6% of patients ( $n = 4$ ), 5% patient had anxiety disorder unspecified and one patient had agoraphobia. The present study was conducted on a smaller sample size. The findings of the present study signify the need for further studies with a larger sample size to interpret results, which could be generalized with greater confidence levels.

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