

# Psychiatric co-morbidity among patients with primary headache

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## Summary

Headache is the commonest complaint in neurology outpatient departments (OPD) and the co-existence of psychiatric disorders with headache is an established fact. This study was aimed to estimate the proportion of adult headache patients suffering from psychiatric co-morbidity and to see the possible association between headache pattern and psychiatric disorders. This cross sectional study was done among 51 sample of neurology OPD of BSMMU. International Classification of Headache Disorders (ICHD-3) was used to determine the types of headache and Mini International Neuropsychiatric Interview (MINI) was used to diagnose psychiatric disorder. Purposive sampling technique was used and data was collected using face-to-face interview from January, 2015 to June, 2015. New and old cases of primary headache of both sexes who were 15-65 years old were taken as samples. The results found that tension type headache was the commonest type of headache and total 62.7% of headache patients suffered from psychiatric disorder. Among them, 39.2% had depressive disorder and 17.6% had anxiety disorders. Logistic regression revealed that higher duration and frequency of headache was a predictor of having psychiatric comorbidity (OR= 1.7). This small study shows the need of larger research in this issue and also points out the importance of psychiatric intervention for headache patients.

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## Introduction

Headache is the most common problem seen in neurology outdoors across the globe. It is hardly possible to find someone who never experienced an episode of headache. Headache accounts for considerable loss in productivity and poor quality of life. Though headache denotes to all the pains and aches in the head, in practice headache may be defined as pain or any kind of discomfort in the head excluding the lower part of the face and including the upper part of the neck.<sup>1</sup> The classification of headache is done by using the International Classification of Headache Disorders (ICHD) provided by the International Headache Society. This classification system is accepted worldwide and according to ICHD-3, beta version, headache can be classified into primary and secondary headaches. Among the primary headaches, the major types are 1) tension type headache (TTH) 2) migraine 3) trigeminal autonomic cephalalgias 4) other primary headache disorders. Each type has many subtypes and each category has a fixed diagnostic criteria.<sup>2</sup>

Headache has significant effect on quality of life and chronic headache is particularly found to be associated with poor quality of life and mental vulnerability.<sup>3</sup> Using intensity as a

proxy for disability, it was found that global mean disabilities of 1.4 for migraine (70%) and 0.6 for TTH (30%). TTH contributed 58% of total headache burden and migraine contributed 42%. They concluded that TTH causes at least as much disability as migraine, is supported by population-based studies on work absence due to headache.<sup>4</sup> It is an established fact that psychiatric disorders particularly depressive and anxiety disorders are highly prevalent among patients with headache. Studies in general population and clinical settings have indicated that psychiatric disorders are common among patients with migraine, TTH and chronic daily headache. Study done among rural populations in India concluded that among patients with headache 48.05% had depressive disorders and 17.9% had anxiety related disorders.<sup>5</sup> Another study done on patients with chronic daily headache found that about 53.3% patients had psychiatric co-morbidity.<sup>6</sup>

Despite the fact of psychiatric morbidity being very common among headache patients, no study in Bangladesh was found by the estimated prevalence of psychiatric disorders among headache patients. The objective of the study was to find out the prevalence and type of psychiatric disorders among

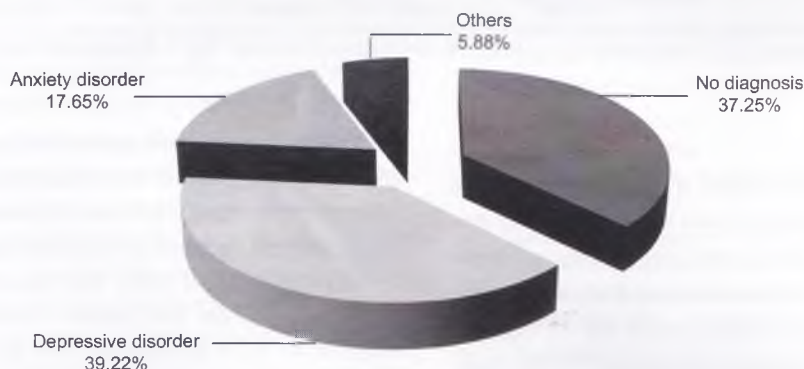
patients with headache attending Neurology outpatient department (OPD) of a tertiary care hospital. This study was aimed to put neurologists and psychiatrists under a same umbrella to provide a better care for the headache patients.

**Materials and methods**

It was a descriptive cross sectional study done at the neurology OPD of Bangabandhu Sheikh Mujib Medical University and sample was selected purposively. About 51 patients were interviewed after taking informed written consent who came to neurology OPD with a chief complaint of headache. New and old cases of primary headache from both sexes were taken as samples whose age range was between 15 to 65 years. Secondary headaches due to trauma, tumor or infection etc. were excluded from the study. Study period was from January 2015 to June 2015. Neurologist diagnosed the types of headache clinically and provided treatment. Researcher confirmed the diagnosis according to the International Classification of Headache Disorders, 3rd edition beta version (ICHD-3 beta).<sup>2</sup>After taking informed consent, face-to-face interview was conducted using semi-structured questionnaire designed by the researcher. To diagnose DSM-IV psychiatric disorders Mini International Neuropsychiatric interview (MINI) English version was used.<sup>7</sup> It is a short, less time consuming, valid and reliable structured clinical interview instrument for Axis I DSM IV disorders. Data analysis was performed according to the objective of the study using computer software program Statistical Package for Social Sciences (SPSS) version 16.0

**Results**

Among 51 respondents, majority (62.7%) had at least one psychiatric disorder. Depressive disorder and anxiety disorders were present in 39.2% and 17.6% population respectively. Rest of the population (5.9%) had other psychiatric disorders (Figure 1). It was interesting to note that 7.8% of the population had more than one psychiatric disorder. The most common type of headache among the respondents was TTH (60.8%). Migraine (19.6 %) and mixed type of headache (19.6 %) were less common. Depressive disorder was found in 3 (5.9%) patients of migraine, 12 (23.5%) patients of TTH and 5 (9.8%) patients of mixed type of headache. The percentage of anxiety disorder was 2%, 11.8% and 3.9% among patients of migraine, TTH and mixed headache respectively (Table 1). Psychiatric disorder was more common among patients of tension type headache but the difference was not significant ( $p < 0.05$ ). Total duration of headache was less than 2 years among 28 patients, and more than 4 years among 15 patients. Psychiatric disorder was more common among patients with longer duration of illness but the difference was not statistically significant ( $p < 0.05$ ) (Table 2). About 31 patients had headache for 4 to 7 days per week and 19 patients had headaches for 0 to 3 days per week. It was observed that the patients who had higher frequency of headache, were suffering from psychiatric disorders more often and the difference was highly significant ( $p = 0.003$ ) (Table 3). Logistic regression showed that higher frequency of headache (in terms of days per week) is a predictor of having psychiatric comorbidity (OR= 1.7) (Table 4).



**Figure 1: The percentage of respondents having psychiatric disorders (n=51)**

**Table 1: Types of headache and psychiatric co-morbidities among respondents (n=51)**

Types of headache	Depressive disorder	Anxiety disorder	Other disorders	No diagnosis	Total	p value
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	
Migraine	3 (5.9%)	1 (2%)	0 (0%)	6 (11.8%)	10 (19.6%)	0.250
Tension type headache	12 (23.5%)	6 (11.8%)	3 (5.9%)	10 (19.6%)	31 (60.8%)	
Mixed	5 (9.8%)	2 (3.9%)	0 (0%)	3 (5.9%)	10 (19.6%)	
<b>Total</b>	<b>20 (39.2%)</b>	<b>9 (17.6%)</b>	<b>3 (5.9%)</b>	<b>19 (37.3%)</b>	<b>51 (100%)</b>	

$\chi^2 = 2.769, df=2$



**Table 2: Association of psychiatric co-morbidity with total duration of headache (n=51)**

Duration of headache	Psychiatric Diagnosis		Total	P value
	Absent	Present		
0-2 years	12	16	28	0.578
2-4years	3	5	08	
>4 years	4	11	15	
Total	19	32	51	

$\chi^2 = 1.096$ ,  $df=2$

**Table 3: Association of psychiatric co-morbidity with frequency of headache (n=50)**

Frequency of headache	Psychiatric Diagnosis		Total	Pvalue
	Absent	Present		
0-3 days/ week	12	7	19	0.003
4-7 days /week	6	25	31	
Total	18	32	50*	

$\chi^2 = 9.81$ ,  $df=1$

\*1 missing data

**Table 4: Logistic regression with duration of headache, frequency of headache (hours/day) and frequency of headache (days/week) as variables (n=51)**

Variables	B	SE	Wald	df	Sig	Exp (B) [OR]
Duration of headache	0.010	0.011	0.916	1	0.339	1.010
Frequency of headache (hours/day)	-0.055	0.079	0.480	1	0.488	0.947
Frequency of headache (days/week)	0.505	0.183	7.636	1	0.006	1.657
Constant	-1.696	0.883	3.693	1	0.055	0.183

\*B= co-efficient for the constant, S.E = the standard error around B, df= degree of freedom, Sig. = Significance, Exp (B) = Exponentiation of B, OR = Odds ratio

## Discussion

Review of 107 headache articles showed that the global prevalence of current headache was 47%, current migraine 10%, current TTH 38% and current chronic daily headache 3%.<sup>4</sup> In Bangladesh, an epidemiological study with a large sample of 3440 headache patients found that 71.13% had tension type headache, 16.05% had migraine.<sup>8</sup> In our study, the percentage of migraine, TTH and mixed headache was 19.6%, 60.8% and 19.6% among headache patients not within the general population. According to the nationwide research (2003-2005), the prevalence of psychiatric disorder among adults in Bangladesh was 16.01% and among them, 8.4% had anxiety disorder and 4.6% had depressive disorder.<sup>9</sup> In this study, the percentage of depressive disorder and anxiety disorder among headache patients was 39.2% and 17.6% respectively and the overall prevalence of at least one psychiatric disorder was 62.7% which was much higher than the general population.

Psychiatric morbidities were common among headache patients and among different types of headache, migraine, tension type headache and chronic daily headache were mostly associated with psychiatric disorders. In an Indian study, using the same research instrument MINI, the researchers found that depressive disorder was present in 46% of patients with migraine, 47.8% of patients with TTH and 62.5% of patients who had both migraine and TTH in combination.<sup>5</sup> In our study, depressive disorder was present in 30% patients with migraine, 40% patients of TTH and among 50% patients with mixed (migraine and TTH) headache which is in concordance with the above mentioned study. Headache patients suffered from anxiety disorders more frequently than the general population. A German study done in neurology OPD using screening instruments found that about 37%, 27% and 4% patients with headache suffered from generalized anxiety disorder, panic disorder and agoraphobia respectively.<sup>10</sup> In an Indian study, anxiety related disorders was present in 22% of patients with migraine, 13% of patients with tension type headache and

17.6% of patients with chronic daily headache.<sup>5</sup> In our study, the proportion of anxiety disorder among headache patients was 17.65% and TTH patients suffered more from anxiety disorder than migraine which does not coincide with other studies. Anxiety related disorders were present in 10% of patients with migraine, 20% of patients with tension type headache and 20% of patients with mixed headache.

The association between migraine and depression had been described in both clinic and community based populations. In large scale population-based studies, persons with migraine were from 2.2 to 4.0 times more likely to have depression. In longitudinal studies, the evidence supports a bidirectional relationship between migraine and depression, with each disorder increasing the risk of the other disorder.<sup>11</sup> Migraine was also co-morbid with generalized anxiety disorder (OR 3.5 to 5.3), panic disorder (OR 3.7), and bipolar disorder (OR 2.9 to 7.3). In a Korean study, among subjects with migraine, 19.0% had anxiety alone, 6.1% had depression alone, and 11.6% had both anxiety and depression.<sup>12</sup> In our study, only 10 patients had migraine and among them, 3 patients (30%) had depressive disorder and one (10%) had anxiety disorder. Comparison with other studies was difficult due to the small number.

In our study, it was found that higher frequency of headache (in terms of days per week) is a predictor of having psychiatric co-morbidity (OR= 1.7). This finding was in concordance with a Korean research who also found that headache frequency per month was remarkably higher in subjects having migraine with anxiety and depression than in those having without anxiety or depression.<sup>12</sup> Some studies suggested that psychiatric comorbidities might be a risk factor for migraine chronification (i.e., progression from episodic to chronic migraine).<sup>13</sup> Treatment of one condition could help prevent progression to one or both of the other two. Psychiatric comorbidities seemed to increase the risk of development of migraine chronicity, decrease the quality of life of patients with migraine, and complicate migraine management. Hence, it was recommended to screen patients with migraine for psychiatric comorbidities.<sup>14</sup> It was also seen that psychiatric disorder has bidirectional relationship with headache. A case-control study in Brazil estimated the life time prevalence of primary headache among Generalized Anxiety Disorder patients which was much higher than healthy controls (86.7% versus 46.7%).<sup>15</sup> Many studies, therefore recommended multidisciplinary approach for headache patients.

## Conclusion

Recognition and treatment of psychiatric co-morbidity in patients with chronic and recurrent headaches is necessary to improve quality of life, prognosis and reduce the risk of chronic condition of the disease. This study shows the need

of larger research in this issue and also points out the importance of psychiatric intervention for headache patients. This study would also assist to create awareness about the need of psychiatric evaluation of headache patients and the importance of a timely referral to a psychiatric facility.

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