

## Psychiatric morbidity in children with epilepsy

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### Summary

Suffering from psychiatric illness is relatively common in epilepsy. There is now general agreement that incidence of neuro-behavioral disorders is higher in patients with epilepsy. The objective of the study was to find out the proportion of psychiatric disorders among the children suffering from epilepsy. It was a cross sectional study conducted during the period from July 2009 to June 2011 at the department of Paediatrics in Sir Salimullah Medical College and Mitford Hospital, Dhaka, Bangladesh. In the study 104 children, aged 5-16 years, having epilepsy were purposively included and patients with febrile seizure were excluded. Data were collected through face-to-face interview using a semi-structured questionnaire and diagnosis of psychiatric disorders was assigned according to the Diagnostic and Statistical Manual of Mental Disorders, 4<sup>th</sup> edition, text-revision (DSM-IV-TR). The results showed that among all patients 56.7% were male and 43.3% were female. Most of them (80.8%) were within 5-10 years of age. Among them, 57.7% of the cases had associated psychiatric disorders, where 21.2% had intellectual disability, 10.6% communication disorder, 7.7% learning disorder, 6.7% major depressive disorder, 5.8% ADHD and 1.9% had autistic disorder. This study suggests that significant number of children with epilepsy has been suffering from psychiatric illnesses. So, during diagnosis of epilepsy, early psychological assessment should be done.

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### Introduction

Epilepsy is a neurological disease which usually starts at childhood and characterized by seizures, or a paroxysmal brain dysfunction due to excessive neuronal discharge with a lifetime prevalence of 1% to 2%.<sup>1</sup> It is the most common neurological disorder worldwide affecting an estimated 50 million people and 80% of affected children are estimated to live in low-income countries.<sup>2-4</sup> Children with epilepsy have a high burden of psychiatric and neuro-developmental co-morbidities, and they experience poor long-term psychosocial outcomes even after remission of their epilepsy in adulthood.<sup>1,5</sup> Epilepsy affects physical, mental and behavioral functions and is associated with higher risk of premature death due to traumatic brain injury, status epilepticus, suicide, pneumonia and sudden death, and it accounts for 1.4% of all years of life lost.<sup>3</sup> There is now a general agreement that the incidence of neurobehavioral disorders is higher in patients with epilepsy than in the general population.<sup>6</sup> Co-morbidities in epilepsy can be debilitating, but they are often overlooked. Fortunately, a number of recent efforts are increasing the attention to co-morbidities.<sup>7</sup> Epilepsy

has long been considered to be a risk factor for psychosis.<sup>8</sup> There are also increased risks for developing other psychiatric co-morbidities. Though the increased prevalence of behavioral problems has often been documented in children with chronic seizures, several studies have also shown an increased prevalence of behavioral problems in children with new-onset or recent-onset seizures. Mitchell et al. (1994) followed up children for 18 to 30 months. They found that the severity of seizures and the prevalence of behavioral problems remained relatively stable over time.<sup>9</sup> The aim of this study was to report the psychiatric co-morbidities among the children with epilepsy at a tertiary care hospital in Bangladesh.

### Materials and methods

This cross sectional study was conducted during the period from July 2009 to June 2011 at the department of paediatrics in Sir Salimullah Medical College and Mitford Hospital, Dhaka, Bangladesh. A total of 104 children with epilepsy, aged 5-16 years, were enrolled consecutively in the study and patients with febrile seizure were excluded. Informed consent was taken from the parents or attending guardians before

enrollment in the study. Diagnosis of epilepsy was confirmed by a neurologist. Then data were collected through face-to-face interview using semi-structured questionnaire. Psychiatric assessment was done by psychiatrists working at the department of Psychiatry in SSMC and Mitford Hospital and diagnosis was assigned according to DSM-IV-TR.<sup>10</sup> Data analysis was done by using SPSS (Statistical Package for Social Sciences) version 16.

## Results

Among 104 enrolled children, 56.7% were male and 43.3% were female with male female ratio 1.3:1. Most of them (80.8%) were 5-10 years of age and the rests were of 11–16 years. Family history of seizures was present in 4.8% cases. Regarding socio-economic condition, most (52.9%) cases were from lower class (Table 1). Among all children 64.4% had partial seizures, 30.4% had absence seizures and 5.2% had generalized tonic clonic seizures. Among 104 studied cases majority (57.7%) had associated psychiatric disorders. Among the disorders, most common (21.2%) was intellectual disability (Table 2).

**Table 1: Distribution of socio-demographic variables of the respondents (n=104)**

Socio-demographic variables	Frequency	Percentage
<b>Age in years</b>		
5–10	84	80.77
11–16	20	19.23
<b>Sex</b>		
Male	59	56.73
Female	45	43.27
<b>Habitat</b>		
Urban	42	40.38
Rural	62	59.62
<b>Socio-economic condition</b>		
Upper	12	11.54
Middle	37	35.58
Lower	55	52.88

**Table 2: Types of psychiatric disorders among the children suffering from epilepsy (n=104)**

Type of disorders	Frequency	Percent
No psychiatric disorder	44	42.3
Intellectual disabilities	22	21.2
Attention-Deficit/Hyperactivity disorder	6	5.8
Autistic disorders	2	1.9
Learning disorders	8	7.7
Communication disorders	11	10.6
Major depressive disorder	7	6.7
Others	4	3.8

## Discussion

The psychiatric co-morbidities in people with epilepsy have important clinical and therapeutic implications. There are few population-based studies evaluating the prevalence of psychiatric conditions in people with epilepsy. Most studies involve selected groups of patients from tertiary centers or specialized clinics. In our study, 57.7% of the cases had associated psychiatric disorders. Dharmadhikari and Sinha found the prevalence of psychiatric co-morbidity as about 31%.<sup>11</sup> Another study found that psychiatric disorders affect 41% patients with epilepsy.<sup>3</sup> The difference can be explained by the differences in study setting and sample size distribution. In our study attention deficit hyperactivity disorder (ADHD) was found in 5.8% of the respondents. Attention problems can be influenced by epileptiform activity. ADHD appears to be prevalent among children who have received new diagnoses of epilepsy as well as in children who have chronic epilepsy. Other studies found that ADHD among children and adolescents with epilepsy, estimated between 12 to 39%, is much higher than in the general population.<sup>12</sup> Another study found ADHD in 2.67% of the respondents which was less than the findings of the current study.<sup>11</sup> Depression in epilepsy is also very common, especially in patients with partial seizures of temporal lobe origin. In our study, it was found that 6.7% had major depressive disorder. Some authors mentioned depression as the most common psychiatric co-morbidity in epilepsy.<sup>7</sup> Many hypotheses have been proposed to explain the relationship between depression and epilepsy. Some researchers found that seizures lead to increased susceptibility to depression by reducing expression of serotonin receptors.<sup>7</sup> Other studies revealed that the common psychiatric co-morbidities found among patients with epilepsy were depression, neuroses (non-psychotic anxiety disorders) and psychoses.<sup>3</sup> It has been observed that 25%–40% of individuals with certain neurological conditions such as epilepsy will develop a marked depressive disturbance and psychotic symptoms at some point during the course of illness.<sup>3</sup> In our study, other co-morbidities included substance abuse, schizophrenia and social phobia. Some studies revealed the correlation between psychosis and epilepsy and found that the prevalence rate for psychosis in epilepsy patients was about 5.6%.<sup>8</sup> Present study was conducted among the patients attended at a tertiary care hospital of Bangladesh and relatively smaller sample. So, studies covering the larger sample sizes, including multiple centers, evaluation of the community peoples, and assessment in primary care setting would be better to generalize the results.

## Conclusion

The present study found that a quite significant number of children with epilepsy suffer from psychiatric disorders. Children with epilepsy need thorough evaluation by relevant

health care providers for early diagnosis of those associated illnesses so that they can get more benefit besides the treatment of epilepsy. But, the study results do not reflect overall situation of the country. A broad based epidemiological study is needed to confirm the study findings.

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