

Psychiatric morbidity among parents of children with epilepsy in Enugu, Nigeria

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Abstract

Background: Epilepsy is a common chronic neurological illness in Nigerian children. The burden of this disease is enormous and psychiatric disorders have been reported not only in the patients but even their siblings. There is a dearth of information on psychiatric morbidity among parents of children with epilepsy. This study is aimed at determining the prevalence of psychiatric morbidity among parents of children with epilepsy in our environment and the relationship with any seizure-related factors. **Method:** In this cross-sectional study, 308 parents of epileptic children attending the Paediatric Neurology Clinic of the University of Nigeria Teaching Hospital, Enugu and 308 control parents were interviewed using the 60-question version of the General Health Questionnaire (GHQ-60) to obtain information on the mental health of the parents. **Result:** One hundred and nine index parents and 68 controls had GHQ scores of 12 and above. The difference was statistically significant with $\chi^2 = 22.73$ and $p < 0.001$. There was a significantly higher morbidity rate among index mothers (49.4%) compared to the index fathers (20.9%) with $p < 0.001$. Mean GHQ scores were also significantly higher in index mothers than in controls with $t = 6.14$, $p < 0.001$. Psychiatric morbidity in parents was significantly related only to seizure control with $p < 0.001$.

Conclusion: Parents of epileptic children have an increased prevalence of psychiatric morbidity and mothers are more affected than fathers. Need for an in-depth psychiatric study on parents and regular counseling is advocated.

INTRODUCTION

Epilepsy, a common, chronic neurological problem in childhood afflicts a significant number of Nigerian children. Every year, not less than 200 new cases of epilepsy are registered in the Paediatric Neurology Clinic of the University of Nigeria Teaching Hospital (UNTH), Enugu. It accounts for 60% of all paediatric neurology cases seen in UNTH Enugu¹, while at the Paediatric Neurology Clinic in the University of Calabar Teaching Hospital, Calabar, Nigeria, it was the third major neurological disorder seen.² Chronic illness in children predispose to emotional disorders not only in the children, but also in their parents and siblings.^{3,4} Epilepsy in general fosters negative reactions in family members that may be detrimental to the person with epilepsy.

Studies^{5,6} have suggested that the presence of a child with epilepsy in the family affects the general well being of the primary caretaker, typically the mothers who are emotionally overwhelmed by the child's illness. Anxiety, depression, feelings of rejection, low self-esteem and guilt are reported among these mothers who are often

more concerned about the children's epilepsy than the fathers. While extensive and detailed studies on the psychiatric morbidity among parents of children with epilepsy have been carried out in other parts of the world, none has been done in Enugu, South Eastern Nigeria. The limitations in extrapolating results from such centres to our own society are obvious, when one considers our different social set up, the possible influence of the extended family system and the widely recognized economic and cultural differences. This study was therefore carried out with the aim of determining the prevalence of psychiatric morbidity among parents of children with epilepsy and the relationship if any with seizure control and duration of illness.

METHODS

Study design was cross sectional and convenient sampling method was adopted. All children referred to the Neurology Clinic with a diagnosis of epilepsy, and no other neurological deficit, who live in and around Enugu were consecutively recruited for this study over a 12 month period

(January 2006 to December 2006). The diagnosis of epilepsy was based on properly documented history of epileptic seizures, conforming to the description contained in the revised International Classification of Epileptic Seizures.⁷ The parents of the children with epilepsy, who for the purpose of this study were called the index parents, were also recruited. Children with epilepsy were excluded if the parents were either dead, not available for the study or refuse to give consent. Also excluded were patients with more than one type of epilepsy, had evidence of any other neurological disorder or history suggestive of other chronic illness such as sickle cell disease, bronchial asthma or diabetes mellitus. Presence of a sibling with a chronic illness in the family was also an exclusion criterion. The control parents were parents living in the same neighborhood as the index parents and comparable to the index parents in all respects except that they did not have a child with epilepsy. Neighborhood was defined as area within about five minutes walking distance radius from the index parents' home. The control parents were identified by home visits to the area where the children with epilepsy lived. The index and control families were similar in terms of family size, age of parents, ages of children, socio-economic status and living accommodation.

Information obtained from the patients included age, sex, characteristics of epilepsy including age of onset of epilepsy, age at presentation to the clinic, type of seizures, medication (type of drug, dosage, compliance), frequency of attacks, state of control of the seizures (good, fair, poor) and any additional health problems. Drug compliance was said to be good if drug was taken regularly, in adequate dosage and interval, and poor if it was irregular and patient not taking the recommended dosage. Seizure control was said to be good if seizure frequency was reduced by 80% or more, fair if reduced by 51-79%, and poor if reduced by 50% or less. Patients with duration of epilepsy less than 3 months were considered to have recently diagnosed epilepsy while those with duration of epilepsy more than 24 months were said to have long standing epilepsy.

The enrolled parents were interviewed using a pro forma and information obtained included age, sex, occupation, marital status, educational attainment and residential address. The 60-question version (GHQ-60) of the General Health Questionnaire was used to obtain information on the health of the parents by interview method. This psychometric test with excellent psychometric

properties has been widely used.⁸⁻¹⁰ The GHQ was designed as a screening instrument to identify psychiatric disorders. It does not aim to provide a diagnosis but rather to identify those in need of further psychiatric assessment. A score of 12 and above is in the psychiatric range and regarded as significant.

Parents who accompanied their children to the clinic were interviewed in the clinic while the others were interviewed at home during a home visit. The control parents were also interviewed at home using the same questionnaire.

Social classification was done using the scheme proposed by Oyedeji¹¹ and subjects were classified into five Grades (I-V) based on the occupational and educational levels of parents. Grade I which represents the highest social class comprises of the senior public servants, professionals, large scale businessmen and contractors with university education or its equivalent. Grade II are intermediate civil servants with secondary education with further training such as Ordinary National Diploma (OND) or senior school teachers with National Certificate of Education (NCE). Grade III are junior school teachers, drivers and artisans with secondary education. Grade IV are petty traders, laborers and messengers or other related workers with primary education while grade V (lowest social class) consists of the unemployed, students, fulltime housewives and the subsistence farmers with no formal education. Controls were matched strictly for social class.

Ethical clearance was obtained from the Ethical Committee of the hospital and written consent was obtained from all the parents. Statistical analysis was by Chi² test. P-value <0.05 was accepted as significant.

RESULTS

During the 12-month period, three hundred and eight parents of 156 children with epilepsy seen at the Paediatric Neurology Clinic, who met the inclusion criteria, were enrolled for the study. Three hundred and eight parents from the neighborhood were recruited as control. Of the 308 index parents, 4 were widowed leaving each group with 152 fathers and 156 mothers. There was no separated, divorced or single parent. Fifty-three percent of the families of the children with epilepsy were in social classes IV and V while 41% were in social classes II and I.

Regarding the clinical description of seizures, the three commonest seizure types were generalized tonic-clonic seizures (54.5%),

Table 1: General Health Questionnaire (GHQ) scores of index and control parents

GHQ Score	Index fathers N (%)	Control fathers N (%)	Index mothers N (%)	Control mothers N (%)	Index total N (%)	Control total N (%)
0 – 11	120 (78.9)	120 (78.9)	79 (50.6)	120 (76.9)	199 (64.6)	240 (77.9)
12 – 19	20 (13)	20 (13.1)	31(19.9)	24 (15.4)	51 (16.6)	44 (14.3)
≥ 20	12 (7.9)	12 (7.9)	46 (29.5)	12 (7.7)	58 (18.8)	24 (7.8)
Total	152 (100)	152 (100.0)	156 (100.0)	156 (100.0)	308 (100.0)	308 (100.0)

complex partial seizures (19.2%) and simple partial seizures (10.3%). The frequency of other types was as follows: myoclonic seizures (4.5%), absence seizures (4.5%), partial with secondary generalization (3.8%) and atonic seizures (3.2%). The duration of epilepsy ranged from 2 to 144 months with a mean of 39.1 (\pm 28.9) months. The duration was greater than 24 months in 66%, 3-24 months in 33% and less than 3 months in 1%. Drug compliance was good in 123 (78.8%) patients and poor in 33 (21.2%) patients. Seizure control was good in 101 (64.7%) patients, fair in 3 (1.9%) and poor in 52 (33.3%).

The age of index and control parents range from 22-56 years. The mean age of the index fathers was 40.9 (\pm 6.7) years, while that of the control fathers was 42.4 (\pm 6.2) years. The index mothers had a mean age of 36.4 (\pm 6.4) years while mean age of the control mothers was 37.6 (\pm 5.2) years. There was no significant difference between index and control parents with regards to age and sex ($\chi^2 = 4.67$, $P = 0.13$).

Psychiatric morbidity among parents

Table 1 and 2 show the GHQ scores and psychiatric morbidity pattern among the index and control parents. The scores ranged from 0 to 39. One hundred and nine index parents (34.4%) and 68 (22.1%) control parents had scores of

12 and above. The difference was statistically significant with $\chi^2 = 22.73$ and $p < 0.001$. There was a significantly higher morbidity rate among index mothers (49.4%) compared to index fathers (20.9%) ($\chi^2 = 26.98$, $p < 0.001$). For the control parents, 32 fathers (21.1%) and 36 mothers (23.1%) had scores in the psychiatric range. The difference was not statistically significant ($\chi^2 = 0.18$, $p > 0.05$). Mean GHQ scores were also significantly higher in index mothers (13.7 \pm 9.8) compared to the controls (8.1 \pm 6.1) with $t = 6.14$, $p < 0.001$. The mean score of index fathers was 8.1 \pm 6.3 compared to 7.4 \pm 7.6 in the control fathers and the difference was not statistically significant ($p > 0.05$). All the 4 widows in the index group had scores in psychiatric range with 3 scoring ≥ 20 on the GHQ scale. The 4 widows in the control group also scored high but in the range 12 - 15.

Table 3 shows the prevalence of abnormal GHQ scores of index mothers by age group. Seventy-five percent of mothers aged less than 30 years and all the 4 mothers (100%) aged more than 49 years had scores ≥ 12 . The relationship between age group and GHQ scores however was not statistically significant ($p > 0.05$).

Table 4 shows the relationship between duration of epilepsy in the children and psychiatric morbidity in the both parents. Of the 109 parents with psychiatric morbidity none had a child with epilepsy less than 3 months duration, 27.5% had

Table 2: Distribution of index and control parents by level of psychiatric morbidity

GHQ Score	Index fathers N (%)	Control fathers N (%)	Index mothers N (%)	Control mothers N (%)
< 12 score	120 (78.9)	120 (78.9)	79 (50.6)	120 (76.9)
>12 score	32 (21.1)	32 (21.1)	77 (49.4)	36 (23.1)
Total	152 (100.0)	152 (100.0)	156 (100.0)	156 (100.0)

Percentages in parenthesis

Table 3: Index mother's GHQ score by age-range

GHQ Score	Age group in years				Total
	20 – 29	30 – 39	40 – 49	50 - 59	
< 12	4 (25)	52 (52.5)	23 (57.5)	0	79 (50.6)
>12	16 (75)	40 (47.5)	17 (42.5)	4 (100)	77 (49.4)
Total	20 (100)	92 (100)	40 (100)	4 (100)	156 (100)

$\chi^2 = 0.96$, 1 df, $p > 0.05$

Percentage in parenthesis
df= degree of freedom

children with duration of epilepsy 3-24months and 72.5% had children with epilepsy lasting 24 months or more. However psychiatric morbidity in the parents was not significantly related to the duration of epilepsy in the children ($\chi^2 = 1.736$, $p > 0.05$ and $\chi^2 = 3.411$, $p > 0.05$ for fathers and mothers respectively).

Table 5 shows the relationship between psychiatric morbidity in the parents and seizure control in the children. Of the 109 parents with psychiatric morbidity, 61.5% of them had children with poor seizure control while 40 (36.7%) parents had children with good seizure control. It is also important to note that 34 (17.1%) of 199 parents who had no psychiatric morbidity had children with poor seizure control. The difference between seizure control and psychiatric morbidity in parents was statistically significant with $\chi^2 = 63.82$ and $p < 0.001$. Of the 4 widows in the index parents (parents with children having epilepsy),

3 had children with poor seizure control while one had a child with fair control. All 4 children had generalized tonic-clonic seizure.

DISCUSSION

The distribution of epilepsy in this study agrees with the general trend reported by many authors both in developed and developing countries with generalized seizures being the most common type.^{2,12,13} A higher level of psychiatric morbidity was noted among the parents of the children with epilepsy, than among controls and mothers were affected more than the fathers. The above findings agree with those of previous studies.^{14,15} Epilepsy is highly stigmatized in our environment and patients with epilepsy and their families are often seen as social outcast.¹⁵ These may have contributed to the high prevalence of psychiatric morbidity in the parents of the children with epilepsy. Ritchie¹⁴ and Eiser¹⁶ noted that the

Table 4: Duration of epilepsy and psychiatric morbidity in parents

Duration In months	Index fathers			Index mothers		
	GHQ<12	GHQ≥12	Total	GHQ<12	GHQ≥12	Total
< 3	2 (1.6)	0	2 (1.3)	2 (2.5)	0	2 (1.3)
3-24	43 (34.7)	8 (25)	51 (32.7)	29 (36.7)	22 (28.6)	51 (32.7)
> 24	79 (63.7)	24 (75)	103 (66.0)	48 (60.8)	55 (71.4)	103 (66.0)
Total	124 (100)	32 (100)	156 (100)	79 (100)	77 (100)	156 (100)

$\chi^2 = 1.736$, 2 df, $p > 0.05$ for fathers
 $\chi^2 = 3.411$, 2 df, $p > 0.05$ for mothers

Percentages in parenthesis
df= degree of freedom

Table 5: Seizure control and psychiatric morbidity in parents

Seizure control	Psychiatric morbidity in Parents		
	GHQ \geq 12 N (%)	GHQ<12 N (%)	Total (%)
Poor	67 (61.5)	34 (17.1)	101 (32.8)
Fair	2 (1.8)	3 (1.5)	5 (1.6)
Good	40 (36.7)	162 (81.4)	202 (65.6)
Total	109 (100.00)	109 (100.00)	308 (100.0)

$\chi^2 = 63.82$, 2 df, $p < 0.001$

df= degree of freedom

mother carries a greater part of the burden of caring for a child with epilepsy. In our environment, women play a central role in housekeeping and child upbringing. Many women now work outside the home to supplement the financial income of the family. The burden of a child with epilepsy is an added stress on the mother who must meet the specified roles in the family. The extended family system is gradually disintegrating and the social support that would have been given by extended members of the family is often not forthcoming. There is also lack of organized social support in our environment for children with chronic ailments despite the financial demands imposed on the family by their condition. The availability of social support would help to modify the impact of a chronically ill child on the family.

All the widows both index and control had significant psychiatric morbidity. This finding is in keeping with that of Abiodun⁸ who noted that women who are widowed, separated or divorced suffered significantly more psychiatric morbidity. Evans *et al*¹⁷ noted that the increased burden of managing a child's illness is more in the single-parent home than in the two-parent home. This is because the burden is borne by one rather than two parents. The prevalence rates of 21.1% for control fathers and 23.1% for control mothers compared closely with the previous rates for males and females in the general population (15% and 25% respectively).^{8,18}

Seventy-five percent of mothers aged less than 30 years and all the 4 mothers aged more than 49 years showed psychiatric morbidity. Abiodun's study⁸ on psychiatric morbidity in a primary health care center in a Nigerian rural community showed that the older age group (46

years and above) of women was more likely to have psychiatric morbidity. The findings from the study are comparable with our observation. However, there were only 4 mothers among our patients in the age group of 50-59 years. The younger and less experienced mothers are also expected to be more feel greater burden with a chronic ill child due to inexperience. In this study, 56 (72.7%) of mothers aged less than 40 years had scores in the psychiatric range.

Our results showed that the longer the epilepsy in the children, the more the disturbances the parents exhibited, although this was not statistically significant. Hoare¹⁹ reported that mothers of children with long-standing epilepsy have increased psychiatric morbidity. The stigma and prejudice associated with epilepsy is conceived to be more with long standing epilepsy. Iloeje, Ojinnaka and Onyeama²⁰ noted a high rate of depressive symptoms in adolescents with long standing epilepsy. This may contribute to the high rate of psychiatric morbidity in the parents.

Our results showed that parents whose children had poor seizure control had a greater prevalence of psychiatric morbidity than those with good seizure control. This is not surprising because continuing seizures in a child carries with it a high level of anxiety among parents. Other workers have also documented this trend.^{21,22} Furthermore, it is known that factors such as family history of psychopathology, and in particular an impaired mother-child relationship, greatly affect the emotional development and social adaptation of children with epilepsy and may even provoke seizures.²³ Prognosis of childhood seizure may be influenced by the emotional state of the caregiver.²⁴ It is not clear however from this study whether the

psychiatric morbidity in the mother perpetuates seizures in the child or whether it is the continuity of seizure that predisposed mothers to psychiatric morbidity. Further studies are needed to determine the nature of the relationship between the two. For those with good seizure control, the percentage of psychiatric morbidity was 36.7%. This is higher than 22.1 % noted in the control parents. This could be as due to stigmatization associated with epilepsy in our environment. Even though the seizures are under control, these patients are still on treatment and the financial burden may also be a contributory factor.

In conclusion, this study has shown that the parents of children with epilepsy in Enugu have increased psychiatric morbidity, and mothers were more affected than fathers. Poor seizure control but not the duration of epilepsy has significant association with increased psychiatric morbidity in parents. There is a need for comparative studies with the GHQ in other chronic illnesses, as this might enlighten us more on the sociocultural influence of epilepsy. Future study on coping capability and coping strategy of the parents is also recommended.

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