

Behavioral problems of siblings of epileptic children in Enugu

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Abstract

Background and Objective: The existence of a psychosocial dysfunction in the siblings of children with chronic illness has been documented. There are very few reports on siblings of children with epilepsy. The aim of this study is to investigate to what extent the children's epilepsy has affected their healthy siblings in our own center.

Materials and Methods: Epileptic patients who consecutively referred to the Pediatric Neurology Clinic of the University of Nigeria Teaching Hospital, Enugu, from October 1999 to September 2000 were recruited. Demographic data were obtained, with a questionnaire administered to the parents. Information on the behavior of the school-age siblings and control was obtained by the class teachers using Rutter's behavior scale (B2) for children (Teacher's Scale).

Results: One hundred and fifty-six children with epilepsy, of age four to fifteen years, 124 males and 32 females, with a Male: Female ratio of 4: 1, were recruited; and 156 school-age siblings of the epileptic children (index children) and 156 controls were studied. Prevalence of behavioral problems was 38.5 and 15.4%, respectively, among the index and control children ($P < 0.001$). There was no significant sex difference in the two groups. There was a significant difference in the distribution of the types of behavior problems between the index and controls ($P < 0.05$). The duration of epilepsy did not affect the prevalence of behavior problems ($P < 0.05$), but seizure control had a significant effect on the prevalence of behavior problems ($P < 0.001$).

Conclusions: Siblings of children with epilepsy have more behavioral disturbances than controls. A strong association was found between poor seizure control and the prevalence of behavioral problems.

Key words: Childhood epilepsy, behavior problems, siblings

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Introduction

The existence of a psychosocial dysfunction in siblings of children with chronic illness has been documented by previous workers.^[1] The research on such groups suggests that siblings of children suffering from chronic illness are at risk for both behavioral and developmental problems.^[1,2] These siblings have been noted to exhibit more behavioral and emotional problems than siblings of children with no chronic illness. Other authors have, however, found no such relationship.^[3,4] Different chronic illness may predispose siblings to different sorts of psychosocial adjustment problems or differently influence parents' perceptions of their healthy children. There are very few reports on this with regard to siblings of children with epilepsy.^[5]

A significant number of Nigerian children suffer from epilepsy, and in the Pediatric Neurology Clinic of U.N.T.H, epilepsy accounted for 60% of all cases seen over a three-year period (1985-1987). As psychiatric disturbances and behavioral or emotional problems have been found to be very distressing for the children themselves and their families, and also have a negative impact on their learning at school^[6,7] and because of the controversy cited above,^[3,4] it seemed reasonable to investigate to what extent the children's epilepsy has affected their healthy siblings in our own center.

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Materials and Methods

This was a cross-sectional study carried out over a one-year period, October 1999 to September 2000. Ethical clearance was obtained from the Ethical Committee of the U.N.T.H. Verbal consent was obtained from the parents of the epileptic children as well as the controls.

Inclusion criteria

The study population included the following:

- i. All children consecutively referred to the Neurology Clinic with a diagnosis of epilepsy who were living in or around the Enugu metropolis. The diagnosis of epilepsy was based on a properly documented history of epileptic seizures, conforming to the description contained in the revised International Classification of Epileptic seizures^[8]
- ii. The school-age siblings of the epileptic children, who, for the purpose of this study, were called the index children.
- iii. The control children, who were identified during the home visits to the areas where the epileptic children lived. They were age and sex-matched with the index children and attended the same schools or other schools of the same standard, as those attended by the index children, in the neighborhood. No sibling in their homes had a chronic illness, for example, sickle cell disease, diabetes mellitus or epilepsy. The controls were therefore comparable to the index children in all respects except that they did not have an epileptic sibling. They were similar in terms of family size, age of parents, age of the children, socioeconomic status, and living accommodation.

Exclusion criteria

Patients were excluded from the study if:

- i. They had more than one type of epilepsy.
- ii. There was evidence of any other neurological disorder.
- iii. They had other physical handicaps, for example, cerebral palsy, spina bifida, or the like, or other chronic illness like sickle cell disease; diabetes mellitus, and so on.
- iv. Their siblings also had epilepsy or any other chronic illness.

Data collection

Information obtained from the patients included age, sex, school attended, characteristics of epilepsy, including age of onset of epilepsy, age at presentation to the clinic, type of seizures, medication (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 the drug was taken regularly, in an adequate dosage and interval, and poor if it was irregular or if the dosage was inadequate. 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 three months were considered to have recently diagnosed epilepsy, while those with duration of epilepsy more than 24 months were said to have longstanding epilepsy. Also recorded were names, residential addresses, schools, and biodata of school-age siblings of the epileptic children and their parents.

The parent/parents who brought the patients to the clinic were also interviewed and the following information was obtained: Age, sex, occupation, marital status, educational attainment, number of children including their ages, sexes, and schools attended. The schools of the school-age siblings of the epileptic children and those of their controls were visited. With the help of the head teachers, the various class teachers of the children were identified and were requested to complete the Rutter's Behavior Scale (B2) for children (Teachers' Scale), for every child whose name appeared on the list. The completed questionnaires were submitted to the head teachers who in turn returned the same to the investigator.

This Questionnaire is of proven validity and reliability and has been used by several workers to identify behavioral dysfunction in children.^[9-11] The scale is a 26-item questionnaire standardized for Nigerian children and a Nigerian child is adjudged to have behavioral problems if he has a score of 10 or more.^[12]

Children with behavioral problems were further grouped into those with neurotic or antisocial disorders, as documented by Rutter using the same scale.^[13,14] Those with a neurotic score exceeding the antisocial score were designated as 'neurotic' and those with an antisocial score exceeding the neurotic score were designated as 'antisocial'. The children with equal neurotic and antisocial sub-scores were designated as undifferentiated.

The scheme proposed by Oyedeji,^[15] using parental occupation and educational attainment, was used for social classification. The subjects were classified into five grades I-V, with I representing the highest social class and V the lowest social class. Data analysis was done using the computer program SPSS for windows release 9.0. Statistical analysis was done by the Chi square test and *t*-test. A *P* - value <0.05 was accepted as significant.

Results

During a 12-month period of the study, a total of 320 epileptic patients were seen at the Pediatric Neurology Clinic. One hundred and fifty-six patients who satisfied the study criteria, together with their school-age siblings were enrolled. They were made up of 124 males and 32 females with a Male: Female ratio of 4: 1 and a mean age of 8.4 (12.4) years at presentation.

One hundred and fifty-six school-age siblings of the epileptic children (index children) and 156 controls were also studied.

Fifty-three percent of the index children were in the social class of IV and V, while 41% were in the social class of II and I. Seven seizure types were diagnosed in the patients. The most common among the seizure types were generalized tonic-clonic seizures (54.5%), complex partial seizures (19.2%), and simple partial seizures (10.3%).

The duration of epilepsy from the onset ranged from 2 to 144 months with a mean of 39.1 (128.9) months. The duration was greater than 24 months in 66%, 3-24 months in 33%, and less than three 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 three (1.9%) patients, and poor in 52 (33.3%) patients.

[Table 1] shows the age and sex profile of primary school-age siblings of the epileptic children (index children) and their controls. The two groups were matched for age and sex.

The distribution of Rutter scores (Teachers' scale) among the index and control children is shown in [Table 2]. The scores ranged from 1 to 15, with mean scores of 7.5 (13.5%) for index children and 5.7 (12.9%) for control children. Sixty (38.5%) index children as against 24 (15.4%) control children (χ^2 56.86%, 1 df, $P < 0.001$) had scores of 10 and above. The difference was statistically significant. Among the index children and controls, there was no significant

difference in the prevalence of behavioral problems (score > 10) between males and females.

Among the index children with behavioral problems ($n = 60$), 73.3% were antisocial, 15% were neurotics, and 11.7% were undifferentiated neurotic/antisocial. The corresponding figures for the controls ($n = 24$) were 45.8, 41.7, and 12.5%, respectively. The difference in distribution of types of behavioral problems between the index children and controls was statistically significant (χ^2 -7.37, 2 df, $P < 0.025$)

[Table 3] shows the relationship between the duration of epilepsy and the prevalence of behavioral problems in siblings. There was no significant difference in the duration of epilepsy between the affected and unaffected siblings.

[Table 4] shows the relationship between seizure control and the prevalence of behavioral problems in the siblings. Forty-nine (81.7%) of the 60 affected siblings and three (3.1%) of the 96 non-affected siblings (χ^2 -102.643, 2 df, $P < 0.001$) were from homes where the epileptic child had poor seizure control.

Discussion

Reports of the effect of chronic illness in a child on his/her siblings have not shown a consistent pattern. Even as most authors^[11,16-18] report increased behavioral problems in siblings of children with a chronic illness, others^[19,20] have noted the absence of increased risk for behavior problems on the healthy siblings. This study, however, has shown that

Table 1: Age and sex distribution of siblings of epileptic children (index children) and controls

Age (years)	Index		Control	
	M	F	M	F
6-7	36	11	36	11
8-9	45	15	45	15
10-11	17	14	17	14
12-13	12	6	12	6
Total	110	46	110	46

Table 3: Duration of epilepsy and prevalence of behavioral problems in siblings

Duration of epilepsy	Index children		
	Not affected N (%)	Affected N (%)	Total N (%)
<3 months	2 (2.1)	0	2 (1.3)
3-24 months	32 (33.3)	19 (31.7)	51 (32.7)
>24 months	62 (64.6)	41 (68.3)	103 (66.0)
Total	96 (100)	60 (100)	156 (100)

$\chi^2 = 1.360$; 2df. $P > 0.05$

Table 2: Distribution of rutter scores (teachers' scale) among index and control children

Score	Index children			Control children		
	Male N (%)	Female N (%)	Total N (%)	Male N (%)	Female N (%)	Total N (%)
<10	68 (61.8)	28 (60.9)	96 (6.5)	94 (85.5)	38 (82.6)	132 (84.6)
>10	42 (38.2)	18 (39.1)	60 (39.1)	16 (14.5)	8 (17.4)	24 (15.4)
Total	110 (100)	46 (100)	156 (100)	110 (100)	46 (100)	156 (100)
Mean (SD)	72 (13.4)	88 (13.6)	75 (13.5)	57 (12.9)	56 (13.0)	57 (12.9)

$\chi^2 = 0.012$, 1 df, $P > 0.05$, $\chi^2 = 0.202$, 1 df, $P > 0.05$

Table 4: Seizure control and prevalence of behavioral problems in siblings

Seizure control	Index children		
	Not affected N (%)	Affected N (%)	Total N (%)
Poor	3 (3.1)	49 (81.7)	52 (33.3)
Fair	3 (3.1)	0 (0)	3 (1.9)
Good	90 (93.8)	11 (18.3)	101 (64.7)
Total	96 (100)	60 (100)	156 (100.0)

$\chi^2 = 102.643$, 2 df, $P < 0.001$

the siblings of children with epilepsy have significantly more behavioral problems than the controls.

The prevalence was not affected by sex and the children manifested more antisocial than neurotic disorders. The fact that in this study, the prevalence of behavioral problems was not affected by sex even among the controls, was at variance with the report that in the general child population, psychiatric disturbances and behavioral problems were more common in boys than girls. This could, however, be attributed to the small number of children studied.

Hoare^[21] reported that the siblings of longstanding epileptics were more disturbed than those from families with newly diagnosed epilepsy. However, in the present study, the duration of epilepsy had no significant effect on the prevalence of behavioral problems among the children. It was possible that as a majority of the patients (66%) had a duration of illness exceeding 24 months, this could have given the family members ample time to adjust. Poor seizure control in the child had a significant association with the prevalence of behavioral problems in siblings. This is in keeping with the findings of Hoare^[21] that poor seizure control is a source of stress for other siblings. In our environment, epilepsy is highly stigmatized and families with epileptics tend to hide them from the public because recurrent seizures in a child might expose the siblings to ridicule and shame. The fear and tension that accompanies each seizure episode, might also affect the health of the siblings. They may also be made to look after the epileptic child, thus forfeiting their leisure and sometimes — even education. All this may therefore account for the strong association between poor seizure control and the presence of behavioral problems.

More male siblings than females had behavioral problems in this study. Pless *et al.*^[22] have suggested that identifying psychologically with a disabled sibling can lead to feelings of vulnerability and resentment and the risks are more for same-sexed rather than for opposite-sexed siblings. Our finding is therefore not surprising, as most (79.5%) of the epileptics were males and an increased risk of psychiatric disturbance has been reported in children with epilepsy. Breslau *et al.*,^[23] have also suggested that ill children may affect their siblings directly through the realm of body image or learned behavior.

This study has demonstrated that siblings of children with epilepsy have more behavioral disturbances than the controls. These problems are very distressing for the children and their families, and also impact negatively on their social competence, peer relationships, and learning at school. It is suggested that educational intervention and probably counseling may help to reduce the prevalence of

such problems in affected families.

Conclusions

This study reveals that siblings of children with epilepsy have more behavioral disturbances than controls and that poor seizure control is associated with an increased prevalence of behavioral problems. Effective counseling, social support, and provision of programmed activities for building self-esteem will go a long way in helping these children adjust to problems of chronic disability.

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