

Screening Children with Epilepsy for Behavioral Problems: Utility of the Strength and the Difficulties Questionnaire

Sir,

Childhood epilepsy is a common neurological disorder that negatively impacts children's emotional, behavioral, academic, and social functioning. The harmful impact of epilepsy on the child's functioning is partly attributed to the neurological dysfunction, side effects of the antiepileptic drugs, social stigma, and the psychosocial response of the family to the illness.^[1-3] The burden of epilepsy and the long-term societal costs of childhood-onset epilepsy are considerable and have significant ramifications for the quality of life of individuals with epilepsy.^[4] Early identification of children with emotional and behavioral problems is critical for timely remediation and prevention of psychosocial morbidity. We examine the utility of the strengths and difficulties questionnaire (SDQ) as a screening tool for identifying children with epilepsy with significant emotional and behavioral difficulties.

Seventy children with well-controlled epilepsy and an age-matched healthy control group in the age range of 6–15 years were recruited from the outpatient services of an advanced pediatric center. Children with moderate and severe intellectual disabilities were excluded. The ethical board cleared the study. The Hindi parent-reported measure of SDQ was administered to the parents and used as the primary outcome measure to assess the emotional and behavioral problems in children with epilepsy.^[5] The SDQ has five subscales, including emotional symptoms, conduct problems, hyperactivity/inattention, peer relationship problems, and pro-social behavior. Each subscale consists of five statements which the parent has to report whether it is 'certainly true,' 'somewhat true,' or 'not true.' A total difficulties score is obtained by adding all the subscale scores, except the pro-social score. Higher scores indicate more problems. Both youth- and

parent-reported scales are available across the age range of 2–17 years. The scale is also available in Hindi. The cut-off scores determined the classification of the children in the three groups, namely normal, borderline functioning, or abnormal.

The mean age for the epilepsy sample was 10.14 years (SD = 2.75) (age range = 6–15 years), and 50% of the cases were less than 10 years, and half were 10 years or older. A little more than three-fourths of the patients were boys (77.1%). The two groups were well-matched on age, sex, and socioeconomic status (all comparisons $P > .05$). Comparing epilepsy and the control group on the SDQ three-folds classification for the sub-domains and the total score on the SDQ is presented in Table 1. The results indicated that the epilepsy group, relative to the controls, had a significantly higher proportion of children in the clinically significant range on all the sub-domains and the total SDQ score: emotional symptoms ($\chi^2 = 8.12, P = .017$), hyperactivity/inattention ($\chi^2 = 10.48, P = .005$), conduct problems ($\chi^2 = 21.40, P = .0001$), peer problems ($\chi^2 = 9.01, P = .011$), and total SDQ score ($\chi^2 = 7.54, P = .023$). Interestingly, none of the seizure-related variables were related to the SDQ score, including seizure severity score, type of seizure, and frequency of attacks (all comparisons $P > .05$). Stepwise multiple regression analysis revealed that the child's age explained 5.4% of the variance in the total SDQ scores of the epilepsy group ($F = 4.97, P = .029$). Older children with epilepsy had more emotional and behavioral difficulties, possibly suggesting that a longer duration of epilepsy was a risk factor for the behavioral and emotional problems.

Table 1: Scores on the subscales and total scores on the SDQ by group

Characteristics	Control (70) Percent (n)	Epilepsy (70) Percent (n)	χ^2	P
Emotional Symptoms				
Normal	90.0 (63)	75.7 (53)	8.12	0.017
Borderline	5.7 (4)	4.3 (3)		
Abnormal	4.3 (3)	20.0 (14)		
Hyperactive/Inattention				
Normal	91.4 (64)	70.0 (49)	10.48	0.005
Borderline	2.9 (2)	7.1 (5)		
Abnormal	5.7 (4)	22.9 (16)		
Conduct problems				
Normal	94.3 (66)	62.9 (44)	21.40	0.0001
Borderline	4.3 (3)	14.3 (10)		
Abnormal	1.4 (1)	22.9 (16)		
Peer problems				
Normal (220)	95.7 (67)	80.0 (56)	9.01	0.011
Borderline (68)	2.9 (2)	5.7 (4)		
Abnormal (18)	1.4 (1)	14.3 (10)		
SDQ total				
Normal (244)	95.7 (67)	81.4 (57)	7.54	0.023
Borderline (38)	2.9 (2)	7.1 (5)		
Abnormal (24)	1.4 (1)	11.4 (8)		

DISCUSSION

The present findings add to the growing body of research that pediatric epilepsy patients have significantly higher rates of externalizing and internalizing behavior problems and psychiatric disorders than children with other chronic illnesses not involving the central nervous system.^[3,6,7] For example, a population-based study of children with newly diagnosed early-onset epilepsy reported that nearly two-thirds of the children with epilepsy had neurobehavioral difficulties compared to 27% of the control subjects.^[8] Riley *et al.*^[7] reported that among the children with epilepsy, 18% met the criteria for autism, and 40% were diagnosed with attention deficit hyperactivity disorder. Indeed, evidence indicates that children with epilepsy, even in the absence of intellectual disability, have multiple difficulties, including hyperactivity, inattention, academic underachievement, school completion, and peer problems.^[9] The relationship is bidirectional, and teasing apart the unique contributions of the multitude of factors that impact neurological and psychosocial comorbidities is not straightforward.^[10]

Early identification and comprehensive multidisciplinary management of comorbid behavioral difficulties are essential in circumventing the development of cognitive, academic, and mental health difficulties as children grow. To summarize, the behavioral problems in children with epilepsy are pervasive and multidimensional, and pediatric neurologists need brief instruments that can reliably detect the at-risk children during an office visit. The SDQ appears to be a reliable and straightforward tool easily incorporated in busy office practice.

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Conflicts of interest

There are no conflicts of interest.

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