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Predictors of health related quality of life in childhood epilepsy and comparison with healthy children: findings from an Indian study

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Background/aim: Children with epilepsy have reduced health-related quality of life (HRQOL) due to disease and medications. We aimed to assess child-reported HRQOL in Indian children with epilepsy and compare it with that in healthy children.

Materials and methods: A cross-sectional study of 256 children with epilepsy aged between 5 and 18 years on antiepileptic drug (AED) treatment for at least 3 months was performed and 125 age and sex matched healthy children were included. A generic version of the Pediatric Quality of Life (PedsQL version 4) scale was used to assess HRQOL.

Results: Children with epilepsy had diminished scores in total score and all subdomains of PedsQL as compared to healthy children. Children with epilepsy on polytherapy had diminished HRQOL compared with those on monotherapy. Children with generalized seizures or with symptomatic epilepsy had diminished HRQOL. Significant predictors of poor HRQOL were adverse drug reactions (ADRs) to AED, polytherapy, longer duration of epilepsy, shorter seizure-free interval, and seizure frequency.

Conclusions: Children with epilepsy have diminished HRQOL than healthy children in all subdomains of PedsQL. Significant predictors are ADRs to AED, polytherapy, longer duration of epilepsy, shorter seizure-free interval, and seizure frequency. Comprehensive management of children with epilepsy must go beyond seizure control.

Key words: Children, epilepsy, quality of life

1. Introduction

Epilepsy is one of the most prevalent neurological conditions in children. It is a great public health care concern in developing countries as it accounts for sizeable morbidity and economic loss. Limited epidemiological data in India show that the incidence and prevalence rates are surprisingly similar to those in the developed world (1). An Indian study reported the annual total expense per epilepsy patient to be 344 dollars (estimated as 5 million cases), equivalent to 0.5% of gross national product (2).

Several studies indicate that children with epilepsy are at high risk for poor psychosocial outcomes, including depression and anxiety, low self-esteem, behavioral problems, and academic difficulties (3,4).

Precise etiological determination of epilepsy is challenging due to the poor accessibility and affordability of neuroimaging studies and other investigations (such as genetic studies) in India. Febrile seizures, head injury, positive family history of epilepsy, and developmental delay have been found to be the risk factors for epilepsy in Indian studies (1).

The management of epilepsy has conventionally focused on reduction in seizure frequency as the main goal for successful treatment (5). Pharmacotherapy remains the mainstay of treatment. A vast choice of AEDs is available currently. Although the majority achieve significant seizure control, a considerable treatment gap exists in developing countries due to poverty, stigmatization, and lack of trained manpower (6). Apart from lack of resources, sociocultural beliefs also contribute significantly towards poor control of epilepsy (7).

Recently, epilepsy management has also been oriented towards ensuring optimal health-related quality of life (HRQOL) along with other goals like seizure activity and cognitive improvement. It requires recognizing potential effects of epilepsy on all aspects of life. Measurement of HRQOL adds new and valuable information to other traditional health outcome measures. It is also important

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because children with epilepsy form a high risk group as they are in a critical development phase during which many cognitive and social skills are to be developed. The importance of assessing psychological wellbeing and HRQOL in the developing world has traditionally been ignored. Thus, there is a relative lack of HRQOL data from developing countries like India.

1.1. Importance of risk factors analysis

Earlier published studies have identified a number of clinical and sociodemographic factors affecting HRQOL experienced in children with epilepsy (8–12). Recognizing these factors and their relative contribution to HRQOL is required for the development of treatment goals and counseling plans to improve the HRQOL of these children. The balance between perceived and desired status is considered the essence of HRQOL.

1.2. Selection of Pediatric Quality of Life of version 4 (PedsQL v4.0)

PedsQLv4.0 is a validated HRQOL scale that has already been utilized in assessing HRQOL in various countries (13–16). Standard and easier measures to assess HRQOL are lacking in India. Available measures to evaluate HRQOL in children with epilepsy are limited, with some confined to a particular domain providing a limited HRQOL profile (17,18). Some are applicable only to a particular age group such as adolescents (19,20). Others are specific to parent proxy reporting or child self-report (17,19–21). Only two groups have developed epilepsy specific instruments with both parent proxy and child self-reporting of HRQOL scores (22,23).

PedsQLv4.0 is a brief, standardized, generic, modular, and multidimensional instrument designed for use in healthy children as well as those with acute and chronic health conditions (24). It is valuable as it can be used for multiple diseases such as cancer, diabetes, arthritis, and epilepsy; many of these can be concurrently present in the same child. Another advantage of PedsQL.v4.0 over epilepsy specific scales is that it has been well validated (13) and easily understood and deployed by a nonspecialist physician or paramedical staff.

We performed this study with the prime aim of finding individual domains, psychological function, and total HRQOL in children with epilepsy. We also aimed to evaluate the effect of number of AEDs prescribed, type of seizures, and etiology of epilepsy on individual domains, psychological function, and total HRQOL, and finding out predictors of HRQOL using PedsQL.

2. Materials and methods

The study was conducted in an outpatient pediatric neurology clinic of a public tertiary care teaching hospital. It was an observational, noninterventional, and interview-based cross-sectional study with a subgroup of age- and sex-matched healthy children. The participants were recruited between August 2010 and January 2014. The study participants included in this study were recruited consecutively according to the inclusion and exclusion criteria. Children of either sex aged between 5 and 18 years diagnosed with idiopathic or symptomatic epilepsy on AED treatment at least 3 months and willing to participate were enrolled in the study. Children having any form of mental and motor disability or with incomplete data were excluded because they might interfere with assessment of quality of life. This study was approved by Institutional Ethics Committee (Government Medical College and Hospital (GMCH), Chandigarh, India). Data were collected from all eligible children after informed consent was obtained from their parents or guardian.

PedsQL v4.0 was completed in the neurological clinic examination room. It was administered by an interviewer for parents who were illiterate.

2.1. Demographic and clinical factors

Parents of eligible children who consented to participate were assessed for demographic and clinical factors that could influence the HRQOL of recruited children. Sociodemographic factors such as age, sex, and parental education status, occupation, and annual income were recorded in pro forma. Clinical factors were determined and recorded in terms of seizure type, seizure frequency over the preceding 6 months, number of AEDs, seizure-free interval, and duration of seizures. Patient's seizure type was classified broadly as generalized seizures, partial seizures, and partial seizures with secondary generalization according to ILAE 2011. Diagnosis of the classification of epilepsy was attempted based on seizure etiology, electroencephalographic, and neuroimaging findings. Seizure frequency was determined from the patient's medical records. Each patient has separate medical records; the general practitioner records seizure frequency at each visit of the patient.

2.2. Investigation tools and questionnaire

2.2.1. Socioeconomic variables: Kuppuswamy's socioeconomic status scale

Socioeconomic status was assessed using information about family income, and occupation and level of education of the main earning member of the family. Modified Kuppuswamy's Socioeconomic Status Scale categorization was used for this assessment (25). To perform the analysis of these data, the following categorical variables were finally created: upper level (1), upper middle level (2), upper lower (3), lower middle (4), and lower (5).

2.2.2. Quality of life: the Pediatric Quality of Life Inventory (PedsQL v4.0)

Use of the PedsQL v4.0 was authorized by the developer (James Varni). We adopted PedsQL in Hindi, which was

already cross culturally validated into Hindi (national language) for use in India by Awasthi et al. (26). Age-appropriate versions of the PedsQL v4.0 were administered to enrolled children and their parents. The questionnaire consisted of 23 items covering four generic core scales, each with multiple items (physical: eight items, emotional: five items, social: five items, and school functioning: five items for older children). Each item was rated on a scale from 0 to 4 and scored according to the guidelines established by Varni (27).

Items were subsequently reverse scored and linearly transformed to a 0 to 100 point scale (0 = 100, 1 = 75, 2 = 50, 3 = 25, 4 = 0) with higher converted scores indicating a better quality of life. PedsQL calculates two summary scores from the above measurements. The physical health summary score is the same as the physical functioning subscale (eight items), and the psychosocial health summary score is the mean of the emotional, social, and school functioning subscales (15 items). The total summary score was calculated from the mean of all answered items. Parents' assessment was used to determine the child's HRQOL in the present study. The questions about the problems faced in past month were recorded.

Impact of epilepsy on HRQOL was also rated as a score of 0–1 implying no impact, with a score of 4 implying the worst impact on the subdomains of PedsQL. Children having a score of 2 were considered to have mild severity, a score of 3 moderate severity, and a score of 4 severe.

2.3. Normative healthy children sample and matching procedure

We took 125 healthy children of either sex between 5 and 18 years old or their parents from family parks, different kindergartens, and schools. Children with developmental delay, chronic illness, or acute illness within 1 month of administration of PedsQL v4.0 were excluded. The parents completed the same parent proxy report module as described above. Later to compare quality of life in children with epilepsy, we chose 125 one-to-one age-matched (similar age in years but not in months) healthy children.

2.4. Data analysis

The data were analyzed using Statistical Package for the Social Sciences version 15.0. The data were presented in means, standard deviation (SD) or median, interquartile range (IQR) for continuous variables, and percentages for categorical variables. To evaluate the impact of epilepsy on HRQOL, we compared total HRQOL among children with epilepsy to healthy children using the unpaired t-test. Multivariate analysis of variance (MANOVA) was used for comparison of different domains of PedsQL, total HRQOL, and mono- and polytherapy in children with epilepsy and healthy children. A stepwise regression model was used for predictors of HRQOL. P values <0.05 were considered significantly different.

3. Results

In the present study 256 children with epilepsy were enrolled. Among them, 154 (60%) were boys. Mean (SD) age of the enrolled children was 10 (3) and half of the children belonged to the 8–12 years age group. Among the total cohort, more than 3/4 of the children were on a single AED. Among the children with symptomatic epilepsy, neurocysticercosis (81, 57.4%) was the most common etiology. Demographic and clinical characteristics are given in Table 1.

3.1. Comparison of HRQOL with that of healthy children

One hundred and twenty-five age-matched children with epilepsy were selected randomly from a pool of 256 children and HRQOL scores of this subgroup were compared with those of healthy children (Table 2). Mean (SD) age of children with epilepsy and healthy children was 10.6 (4) and 10.7 (4), respectively (P = 0.8). Approximately half of the children in both the groups were boys (81 (53%) in children with epilepsy and 72 (47%) in healthy children, P = 0.3). A significantly higher total HRQOL score was observed in healthy children as compared to the children with epilepsy subgroup (Table 2).

While comparing the individual four domains of PedsQL, a significant difference in HRQOL was found between the two groups, F (4, 246) = 18.02, P < 0.01; Wilk's lambda = 0.773. Post hoc test analysis revealed that significantly higher scores in physical, emotional, social, and school functioning domains were reported in healthy children as compared to children with epilepsy, showing better HRQOL in healthy children (Table 2).

3.1.1. Comparison of HRQOL in children with epilepsy according to demographic and clinical characteristics

On assessing HRQOL, boys performed better in emotional, social, psychosocial summary score, and total HRQOL score. Boys and girls performed equally well in physical functioning and school functioning (Table 3). We also found significantly higher total HRQOL scores in children receiving monotherapy as compared to polytherapy. Further, while comparing the four domains of PedsQL, a significant difference in HRQOL was found between these two groups (n = 256), F (4, 251) = 3.55, P = 0.008; Wilk's lambda = 0.946) based on MANOVA. The post hoc test revealed that children on polytherapy had significantly diminished HRQOL as compared to children on monotherapy in domains such as physical, emotional, social functioning, and total HRQOL. However, school functioning was not found to be affected by number of AEDs (Table 4).

A comparison of the type of seizures with HRQOL and its subdomains shows that children with generalized seizures (subgroup I) had significantly lower mean total HRQOL scores, social functioning, and psychosocial summary score as compared to children with partial

Table 1. Demographic and clinical characteristics of children with epilepsy (n = 256).

Variable	Statistic	Value
Age (years)	Mean (SD)	10 (3)
	Median (IQR)	9 (7–12)
Age category		
5–7	n (%)	74 (29)
8–12	n (%)	133 (52)
13 – 18	n (%)	49 (19)
Sex		
Boys	n (%)	154 (60)
Girls	n (%)	102 (40)
Duration of disease (months)	Mean (SD)	28 (26)
	Median (IQR)	19 (9–38)
Duration of treatment (months)	Mean (SD)	23 (20)
	Median (IQR)	16 (7–28)
Type of epilepsy		
Symptomatic	n (%)	141 (55)
Idiopathic	n (%)	115 (45)
Type of seizure		
Partial seizures		
Simple partial seizures	n (%)	23 (9)
Complex partial seizures	n (%)	80 (31)
Partial seizures with secondary generalization	n (%)	33 (13)
Generalized seizures		
Generalized tonic clonic seizures	n (%)	100 (39)
Absence	n (%)	11 (4.5)
Atonic	n (%)	3 (1)
Juvenile myoclonic seizures	n (%)	6 (2.5)
Seizure-free interval (months)	Mean (SD)	12 (12)
	Median (IQR)	9 (3–19)
Baseline seizure frequency (n)	Mean (SD)	5 (8)
	Median (IQR)	3 (1–10)
Treatment		
Monotherapy	n (%)	220 (86)
Polytherapy	n (%)	36 (14)
Socioeconomic status*		
Upper	n (%)	36 (14)
Upper middle	n (%)	65 (25)
Uppers lower	n (%)	50 (20)
Lower middle	n (%)	48 (19)
Lower	n (%)	57 (22)

* Based on Modified Kuppuswamy's Socioeconomic Status Scale categorization
SD, Standard deviation; IQR, Interquartile ratio; Baseline seizure frequency is the seizure frequency in previous 3 months.

Table 2. Comparison of HRQOL between epilepsy and healthy control group.

Criterion	Epilepsy group	Control group	P value
N	125	125	
Age (years)			
Mean (SD)	10.6 (4)	10.7 (4)	0.8
Range	5–18	5–18	
Male sex (n (%))	81 (53%)	72 (47%)	0.3
Physical functioning*	82 (9)	93 (13)	<0.01
Emotional functioning*	75 (19)	84 (14)	<0.01
Social functioning*	88 (14)	96 (9)	<0.01
School functioning*	80 (17)	89 (14)	<0.01
Psychosocial health summary score*	81 (10)	90 (10)	<0.01
Total HRQOL*	81 (8)	91 (10)	<0.01

SD, Standard deviation
P values were taken from post hoc test. * Results presented as mean (SD)

Table 3. HRQOL in children with epilepsy.

Criterion	Statistic	Total (n = 256)	Boys (n = 154)	Girls (n = 102)	P value
Physical functioning	Mean (SD)	84 (7)	84 (7)	83 (8)	0.32
	Median (IQR)	88 (81–88)	88 (81–88)	88 (81–88)	
Emotional functioning	Mean (SD)	76 (17)	78 (17)	72 (17)	0.02
	Median (IQR)	75 (65–90)	80 (70–90)	70 (60–90)	
Social functioning	Mean (SD)	89 (13)	90 (11)	87 (15)	0.02
	Median (IQR)	90 (80–100)	95 (80–100)	90 (80–100)	
School functioning	Mean (SD)	81 (17)	81 (17)	82 (18)	0.71
	Median (IQR)	88 (70–95)	85 (70–91)	90 (70–95)	
Psychosocial health summary score	Mean (SD)	82 (10)	83 (10)	80 (11)	0.04
	Median (IQR)	81 (76–90)	83 (77–92)	80 (76–87)	
Total HRQOL	Mean (SD)	82 (8)	83 (8)	81 (9)	0.03
	Median (IQR)	83 (77–88)	83 (78–91)	81 (77–86)	

SD, Standard deviation; IQR, Interquartile ratio

seizures (subgroup II), but physical, emotional, school, and physical summary scores were comparable (Table 5).

Further, we also found a significantly higher proportion of children having idiopathic epilepsy (subgroup III) to be normal in physical, social functioning, psychosocial summary score, and total HRQOL as compared to children having symptomatic epilepsy (subgroup IV). A higher proportion of subgroup III were found to be normal in emotional and school functioning as compared to subgroup IV, but statistical significance was not achieved (Table 5).

3.2. Predictors of HRQOL

Stepwise regression analysis showed that higher baseline seizure frequency, presence of adverse drug reactions (ADRs) to AEDs (which was determined by WHO UMC criteria), and being on polytherapy were significantly related to diminished HRQOL in the physical functioning domain, accounting for 2%, 3%, and 2% variance in

Table 4. Comparison of HRQOL between mono- and polytherapy.

Criterion	Monotherapy (n = 220)	Polytherapy (n = 36)	P value
Physical functioning*	84 (6)	81 (11)	0.032
Emotional functioning*	76 (17)	70 (15)	0.036
Social functioning*	90 (13)	84 (11)	0.011
School functioning*	82 (17)	77 (20)	0.066
Psychosocial health summary score*	83 (11)	77 (5)	0.001
*Total HRQOL	83 (8)	78 (4)	0.01

P values were taken from post hoc test. * Results presented as mean (SD)

Table 5. Comparison of HRQOL between seizure type and epilepsy etiology.

Variables	Severity	Total	Generalized seizure (Subgroup I) N = 120	Partial seizure (Subgroup II) N = 136	Idiopathic epilepsy (Subgroup III) N = 115	Symptomatic epilepsy (Subgroup IV) N = 141	P value	
							Subgroup I vs. subgroup II	Subgroup III vs. subgroup IV
Physical health functioning domain	Normal	237 (92)	113 (94)	124 (91)	114 (99)	123 (87)	0.267	0.001
	Mild	17 (7)	6 (5)	11 (8)	1 (1)	16 (11)		
	Moderate	2 (1)	1 (1)	1 (1)	0 (0)	2 (1)		
Emotional functioning domain	Normal	151 (59)	72 (60)	79 (58)	75(65)	76 (54)	0.151	0.177
	Mild	90 (35)	44 (37)	46 (34)	32 (28)	58 (41)		
	Moderate	15 (6)	4 (3)	11 (8)	8 (7)	7 (5)		
Social functioning domain	Normal	221 (86)	109 (91)	112 (82)	105 (91)	116 (82)	0.046	0.041
	Mild	33 (13)	11 (9)	22 (16)	10 (9)	23 (16)		
	Moderate	2 (1)	0 (0)	2 (1)	0 (0)	2 (1)		
School functioning domain	Normal	187 (73)	87 (72)	100 (73)	86 (75)	101 (72)	0.521	0.342
	Mild	60 (23)	29 (24)	31 (22)	26 (23)	34 (24)		
	Moderate	7 (3)	4 (4)	3 (2)	3 (3)	4 (3)		
	Severe	2 (1)	0 (0)	2 (1)	0 (0)	2 (1)		
Psychosocial functioning	Normal	212 (82)	103 (86)	109 (80)	100 (87)	112 (79)	0.044	0.03
	Mild	44 (17)	17 (14)	27 (20)	15 (13)	29 (20)		
Overall HRQOL	Normal	212 (82)	103 (86)	109 (80)	101 (88)	111 (79)	0.031	0.006
	Mild	44 (17)	17 (14)	27 (20)	14 (12)	30 (21)		

physical scores respectively. Increased number of ADRs, duration of disease, polytherapy, and seizure-free interval were significantly associated with diminished HRQOL, accounting for 23%, 13%, 3%, and 3% variance in psychosocial summary scores. For total HRQOL, number of ADRs, duration of disease, polytherapy, and seizure-free interval were significantly related to diminished total score, accounting for 23%, 13%, 4%, and 2% variance in total HRQOL scores, respectively (Table 6).

4. Discussion

To the best of our knowledge, none of the Indian studies have compared HRQOL in children with epilepsy to age-matched healthy children of the same community with adequate sample size. Comparison of the two groups clearly showed significantly diminished scores in physical, emotional, social, and school functioning domains in children with epilepsy as compared to healthy children. These results are consistent with the findings reported in

Table 6. Stepwise regression analysis for predictors of HRQOL.

Criterion	Predictor	β	R square change	F	P
Physical function	Baseline seizure frequency	–0.178	0.026	7	0.01
	No. of ADR	–1.208	0.03	7	0.001
	Polytherapy	–3.061	0.022	7	0.000
Psychosocial summary scores	No. of ADR	–0.475	0.229	75	0.000
	Duration of epilepsy	–0.431	0.134	72	0.000
	Polytherapy	–0.184	0.033	55	0.000
	Seizure-free interval	–0.190	0.030	46	0.000
Total HRQOL	No. of ADR	–0.478	0.232	76	0.000
	Duration of epilepsy	–0.425	0.133	72	0.000
	Polytherapy	–0.202	0.040	57	0.000
	Seizure-free interval	–0.178	0.027	47	0.001

an Egyptian study by Monir et al. (5) and an American study by Haneef et al. (16), where they showed significantly lower total HRQOL and all functioning domains of PedsQL scale in children with epilepsy as compared to healthy children. Studies conducted in India by Aggarwal et al. (28) and Gandhi et al. (29) reported similar findings but in much smaller sample sizes. The present study reiterates that epilepsy has an adverse impact on children's HRQOL.

Our study also found the impact of sex on HRQOL in children with epilepsy as boys outperformed in physical, emotional, social, and psychosocial domains and total HRQOL score while girls outperformed in school functioning. This is in contrast to the studies conducted by Aggarwal et al. (28) and Nadkarni et al. (30), where no significant sex difference was observed in HRQOL. However, a study conducted by Arya et al. (31) observed that girls outperformed in physical, emotional, social, and psychosocial domains of HRQOL. This might be due to the small sample size (n = 102) and use of a different HRQOL assessment measure in that study.

Our study found that children on polytherapy have diminished HRQOL as compared to children on monotherapy. These results are in concordance with studies from different parts of developing and developed countries (30,32–36). This might be due to the fact that increased number of AEDs is more likely to produce more ADRs leading to diminished HRQOL. However, Arya et al. reported that number of AEDs does not impact HRQOL. This could be due to small study bias as the included sample was much smaller (n = 40) (31). Moreover, polytherapy is associated with complex dosing regimens that might be cumbersome for children as well as parents to comply with regularly (37). The present study also found significantly higher scores in the psychosocial domain in children prescribed monotherapy as compared to polytherapy. Children on monotherapy may have similar HRQOL to healthy children in psychosocial health (38,39). Similar results were observed in studies conducted elsewhere (5,38,40).

Another important predictor studied was the type of seizures. Our study found that children with generalized seizures have diminished social, psychological, and total HRQOL scores as compared to children with partial seizures. These results are in concordance with Monir et al. (5) from Egypt, who reported that epileptic children with generalized seizures have significantly lower HRQOL than those with partial seizures. However, an Indian study by Arya et al. (31) found no significant difference between types of seizures and HRQOL scores. Another study from India, by Aggarwal et al. (28), reported that children with partial seizures are significantly compromised in total HRQOL than generalized seizures. According to a study by Mandelbaum et al. in the US (41), children with generalized nonconvulsive seizures are at greater risk of diminished HRQOL than children with either generalized convulsive or partial seizures. These mixed effects on types of seizures may be because of differences in children characteristics, use of parent proxy measurement to evaluate HRQOL, and use of a different questionnaire to evaluate HRQOL.

We also found that children with idiopathic epilepsy have normal total HRQOL scores and scores in physical, social, and psychological domains as compared to children with symptomatic epilepsy. Similar results were obtained by Sabaz et al. and Bompori et al. (32,34), while Austin et al. (42) reported that the relationship between type of seizure and type of epilepsy with HRQOL was inconsistent.

We found that polytherapy, number of ADRs, duration of epilepsy, and seizure-free interval are significant predictors for psychosocial functioning and total HRQOL.

Overall five factors (sex, number of AEDs, types of epilepsy, polytherapy, and seizure-free interval) were found to be significant predictors for HRQOL. Children with epilepsy need to take medications on a daily basis and attend regular doctor appointments. This adds to the social and economic burden on the child's family. Furthermore, AEDs may cause significant adverse effects such as rashes, drowsiness, irritability, nausea, and headache. Epilepsy may also be accompanied by significant neurological pathology, such as mental retardation, ataxia, and motor deficits. HRQOL is affected significantly in children with epilepsy, because of the chronic nature of disease, long-term medications and their adverse effects, and the social stigma attached to it, especially in developing countries. The poor access to health care, low socioeconomic status, and illiteracy continue to interfere with adequate management of most of the chronic childhood illnesses in developing countries like India.

The limitation of this study is that we did not measure any psychiatric comorbidities, particularly depression and anxiety. These are common in epileptic children. Moreover, these conditions affect HRQOL measures of children.

Studies with a larger sample size and uniform distribution of well, moderate, and poorly controlled epilepsy are advised for future research.

Epilepsy can disrupt physical, emotional, social, and psychological as well as school functioning of children. Better coping mechanisms and social support may improve HRQOL as the duration of epilepsy increases. Baseline seizure frequency, disease duration, seizure-free interval, polytherapy, and number of ADRs were found to be predictors of HRQOL. Management of childhood epilepsy should go beyond the control of seizures. Interventions to improve HRQOL in children with epilepsy should focus on treating mood disturbances and minimizing the medications' adverse effects.

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