

Psychosocial Issues beyond Seizures: A Study of Behavioral Problems in Paediatric Epilepsy Patients

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Abstract: *Pediatric patients suffering from epilepsy are known to have behavioural problems and learning disabilities as comorbidity. The aim of this study is to investigate the prevalence of psychiatric morbidity among children receiving treatment for epilepsy at a tertiary care hospital and estimate the unmet need for psychiatric services in this group of patients. It is a prospective study conducted on 80 patients with epilepsy falling in age group of 3-12 years from January to March -2014. A high prevalence (66.25%) of behavioural disorders was found among these patients. Despite a high prevalence, nearly all patients with psychiatric disorder had no prior contact with psychiatric services and hence, this study finds need for upliftment of psychiatric services to epilepsy children. Comprehensive management of epilepsy is much beyond seizure free life.*

Keywords: epilepsy, behaviour, seizures, cognition, morbidity

1. Introduction

Children with epilepsy seizures are at increased risk of behavioural, emotional and academic problems¹. The risk is associated with both, chronic illness and nervous system disorder. Various behavioural disorder associated with epilepsy are hyperactivity, aggression, autistic features, depression, anxiety, attention deficit, low self esteem, etc. These behavioural problem can be co-related with different factors like type of epilepsy, etiological factors, seizure control, age of onset, underlying condition and refractory nature. These problems can affect social outcome profoundly. The interpretation of psychiatric symptoms as a natural consequence of epilepsy might be responsible for inadequate psychiatric assessment and treatment. However apart from seizure control, cognition and behaviour are two most important factors determining child's independence. Hence, our study aims to find the burden of this unmet need among patients attending epilepsy clinic at Civil Hospital, Ahmedabad.

2. Literature Survey

A high frequency of behavioral problems in children with epilepsy was reported in earlier studies from developed countries and recent studies from these countries confirm that at least a third have a psychiatric diagnosis. Although most of these studies are population based, they may not provide a universally representative sample as none of these studies come from resource-poor settings, including sub-Saharan Africa, despite the high burden of epilepsy in these areas. Differences in symptomatic etiologies, treatment practices, and survival may modify cognitive and behavioral outcomes in these regions.

3. Methods

It is a cross-sectional prospective study where paediatric patients diagnosed with epilepsy and attending epilepsy clinic at Civil hospital, Ahmedabad between January to March 2014, were screened for behavioural problems. Children falling in age groups of 3 to 12 years were screened with help of questionnaire where parents and/or guardians were asked questions. Patients with severe mental

retardation or pervasive developmental disorder were excluded from study. (ICD) International classification of diseases ICD-10 was used to report mental retardation (F-70-79) and specific developmental disorders (F-80-89). If screening suggested probable or possible psychiatric disorder, the patients were referred to child psychiatrist for further management. The study sample comprised of total 80 children with 48 males and 32 females. Out of total, 22 were in age group of 3 to 5 years, 43 in 5-10 years and 15 were in age group of 10-12 years. The standard STRENGTH AND DIFFICULTIES QUESTIONNAIRE was used for parents with total 40 questions with 5 scales generating scores for emotional symptoms, conduct problems, hyperactivity and peer problems. The questions concerned both, child's mental health problems and impact of such difficulties.

Effects of gender, age and type of epilepsy were examined as potential risk factors for behaviour problems. Number of anti-epilepsy drugs, seizure control and mental retardation were assessed as causative factors.

4. Results

Of 80 children with epilepsy screened with help of SDQ, 53 children were suspected to be having behavioural issues with high prevalence of 66.25%.

- Focussing on age wise distribution, out of 22 children belonging to age group of 3-5 years, 13 children with prevalence of 59.05% had behavioural problems; of 43 children in age group of 5-10 years, 36 children were screened positive with prevalence of 83.72% and in age group of 10-12 years, out of 15 children 4 of them were screened positive with prevalence of 26.67%.
- Higher incidence of 70.83% was found in males as compared to females (59.35%)
- Attention deficit was found to be most common with prevalence of 71.69% followed by hyperactivity (62.26%) and least common was autism (3.77%) in our study.
- Correlating types of behaviour disorders with epilepsy type, attention deficit and hyperactive were most common in generalised and partial seizures with oppositional defiance more common in children with status/refractory epilepsy.

- Idiopathic etiology of seizures had hyperactivity (42.42%) in common while remote symptomatic had attention deficit in common. (47.37%)
- Children >2 AEDs were more prone for behavioural issues (81.8%) as per our study.
- Poorly controlled seizure/ refractory epilepsy had more behavioural problem compared to controlled seizures.
- Hyperactivity was more common in children with IQ >70% and IQ 70-50% but attention deficit was common in children with IQ 35-50%.
- Talking of impact of epilepsy, 36.25% of children required assistance daily and 71.25% had emotional liability, 61.25% experienced social isolation and 47.50% had school absenteeism.

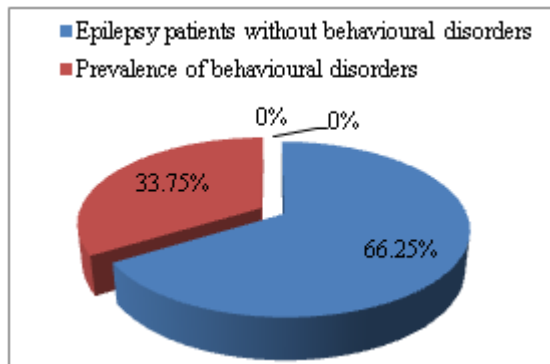


Table: Prevalance of Behaviour Problems According to Age Groups

Age Group	Total(N=80)	Prevalance of Behavior Problems (N=53)
3 – 5	22	13(59.09%)
5 – 10	43	36(83.72%)
10 – 12	15	4(26.67%)

Table: Types of Behavioral Disturbances

	Total Number of Patients	Percentage Prevalance (N=53)	Percentage Prevalance In Total Patients(N=80)
Attention Deficit	38	71.69%	47.5%
Hyperctivity	33	62.26%	41.25%
Opposition Defiance	21	39.62%	26.25%
Depression	11	20.75%	13.75%
Obsessive Compulsive Disorder	6	11.32%	7.5%
Anxiety	4	7.54%	5%
Autism	2	3.77%	3.75%

Table: Correlation Between Behavioral Disturbances and Epilepsies Types

	Total	Idiopathic	Remote Symptomatic	Acute Symptomatic	Familial	Refractory
Attention Deficit	38	8(21.05%)	18(47.37%)	1(2.63%)	2(5.26%)	9(23.68%)
Hyperctivity	33	14(42.42%)	13(39.39%)	-	2(6.06)	4(12.12%)
Opposition Defiance	21	4(19.05%)	7(33.33%)	2(9.52%)	1(4.76%)	7(33.33%)
Depression	11	4(36.36%)	3(27.27%)	2(18.18%)	-	2(18.18%)
Obsessive Compulsive Disorder	6	3(50%)	2(33.33%)	-	-	1(16.67%)
Anxiety	4	2(50%)	-	1(25%)	1(25%)	-
Autism	2	-	2(100%)	-	-	-

Table: Correlation of IQ Assessment with Behaviour Issues

	Total	IQ >70%	IQ 70 – 50%	IQ 35 – 50%
Attention Deficit	38	7(18.4%)	9(23.68%)	22(57.89%)
Hyperctivity	33	8(24.24%)	11(33.33%)	14(42.42%)
Opposition Defiance	21	5(23.8%)	9(42.85%)	7(33.33%)
Depression	11	4(36.36%)	4(36.36%)	3(27.27%)
Obsessive Compulsive Disorder	6	1(16.66%)	3(50%)	2(33.33%)
Anxiety	4	1(25%)	2(50%)	1(25%)
Autism	2	-	2(100%)	-

5. Discussion

The ILAE and IBE define epilepsy as a disorder of brain characterized by an ending predisposition to generate epileptic seizure and by biologic, cognitive, social and psychological consequences of this condition². This association may affect anatomical and neurobiological source of both epileptic and behavioural manifestation. Indeed, there is higher incidence of behavioural problems in children with epilepsy.

The possible mechanisms for relation between epilepsy and behavioural disturbances include- genetic predisposition, common neuropathology, developmental defects, vital neurophysiologic effects, secondary epileptogenesis or a primary psychiatric illness^{2,3}. Multiple interacting biologic and psychosocial factors determine the risk for development of behaviour disturbances but significant association is of psychosocial burden of epileptic disorder. Organic factors at biochemical level reveal association like inhibition of metabolism or hypometabolism surrounding epileptic foci, dysfunction of amygdale and hippocampal complex system and secondary epileptogenesis. Limbic system, frontal lobe, temporal lobe and subcortical grey matter are prime areas of involvement³. Significant non organic factors associated are chronic mental illness, social isolation, psychosocial burden of epilepsy, dependency and an independent psychiatric illness.

The risk of behavioural disturbance is 6-12 times that of general population with prevalence of 7-8% in general population and a high incidence of around 58-65% in epilepsy group. Among these, hyperactivity, depression, obsession – compulsion, oppositional defiance.⁴

Attention deficit hyperactivity disorder is far more common in children than adult with epilepsy; with age of onset in school years of life, it can exist in one of three basic forms as described in (DSM-IV)⁵ either as attention deficit, or as hyperactivity/impulsion or combination form. Neurophysiological studies suggest that frontal cortex and circuits linking these to basal ganglion are critical for executive function & was the prime area of involvement. There is possible role of 5-HT in addition⁶. DSM-IV has described the criteria for diagnosis which must be present in 2 or more situations⁵. This disorder causes clinically significant impairment in social, academic and occupational function. Behaviour therapies, psycomodulation, family therapy and psychotherapies are required for comprehensive management of the cause.

Oppositional deficient disorder as defined by DMV IV⁵ is a recurrent pattern of negativistic, defiant, disobedient and hostile behaviour towards authority figures for atleast 6 months. There are defined criteria for screening but the child often fights, easily angry, annoyed, and often spiteful. However children with ADHD are particularly vulnerable reflecting possible similar pathophysiological mechanism. A downward curve occurs with the parent trying to control child and child defending his autonomy. While comparing co-morbidities like ADHD, management relies on PMT (parent management training) with use of effective, brief and non-aversive punishments⁷.

Another frequently encountered disorder, depression is characterised by feeling of sadness, despair and low self esteem. It is more likely to occur in patients of poorly controlled seizures and disorder of temporal and frontal origin. This reveals that either of two possibilities exists, either as reaction to epilepsy or as a part of epilepsy. Parallel changes of serotonin, nor epinephrine, dopamine and GABA are operant in its pathophysiology. Adequate control of seizures with pharmaco and psychotherapy are cornerstone of treatment⁸.

Anxiety symptoms in epilepsy may be or exacerbated by psychological reactions, including response to unpredictable seizures and restrictions of normal activities. Obsessive – Compulsive disorder, a neurobiological disorder is seen in a relative fewer patients. It can disrupt academic, social and vocational functioning⁵. Autistic spectrum disorders, characterized by qualitative abnormalities in social interactions, aberrant communication skills and repetitive behaviours are seen in children with epilepsy^{1,5}.

6. Conclusion

A high prevalence of 66.25% of behavioural disorders was found in our study, with attention deficit being the most common subtype (71.69%). Idiopathic and remote symptomatic type of epilepsy were more frequently associated with the same. Refractory nature of seizures and severe mental retardation could also be the risk factors. Life is significantly impaired owing to addition of behaviour problems along with epilepsy itself.

Psychiatric co-morbidities are thus frequent in paediatric patients with epilepsy. This study finds out the high

prevalence of comorbidities and also tries to correlate associated factors as a role in its etiology. Our study concluded that it impairs quality of life much more than has been thought of. Despite such high prevalence and its impact on various aspects of life, behaviour issues tend to be neglected in managing seizures in epilepsy patients. Almost all children in our study had no prior contact with any psychiatric services. Comprehensive management of epilepsy is much beyond seizure free life and includes lifestyle modification, psychological and behavioural management, etc and requires combined effort of paediatrician, neurophysician, child psychologist and parents. This study finds the unmet need for upliftment of psychiatric services in this group of patients.

The children in our study with possible or probable behaviour disturbances were referred to child psychiatrist in our hospital with appropriate intervention was carried out and effectively managed. Early recognition and management of behaviour problems is the cornerstone of integrated management of epilepsy in paediatric patients.

7. Future Scope

We must also increasingly integrate psychologist into the pediatric primary care setting by providing mental health services directly to patients, provide consultation and collaborative relationships with pediatricians and allied services. We must demonstrate viability through empirical support for treatment interventions, which requires continued efforts to demonstrate improvements in pediatric outcomes (health, quality of life, psychological functioning, development). This also requires evidence of medical cost offset, evidence of the efficacy of the integration of clinical research and practice, and evidence of the effectiveness of psychological interventions in decreasing societal costs related to pediatric conditions.

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